

SOUTHWESTERN UTAH YOUTH FACILITY
HVAC SYSTEM UPGRADE
DIVISION OF YOUTH CORRECTIONS
DFCM PROJECT #05128430



State of Utah—Department of Administrative Services

DIVISION OF FACILITIES CONSTRUCTION
AND MANAGEMENT

4110 State Office Building / Salt Lake City, Utah 84114 / 538-3018



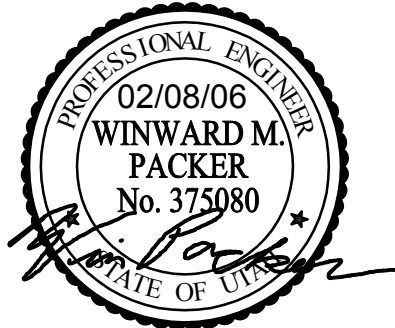
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DRAWING INDEX:

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M-001	GENERAL MECHANICAL NOTES AND LEGEND
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MD102	MECHANICAL DEMOLITION
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ME401	LARGE SCALE MECHANICAL ROOM REMODEL FLOOR PLAN AND SECTIONS
ME501	MECHANICAL DETAILS
ME502	MECHANICAL DETAILS
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ME602	MECHANICAL SCHEDULES
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EP201	ENLARGED MECHANICAL ROOM
EG101	SYMBOLS, NOTES & SCHEDULES

DFCM DESIGN AND CODE CRITERIA

(Fee A.E: Attach and fill in applicable data for each drawing submittal)

Applicable Codes:

International Building Code	Year 2003	International Mechanical Code	Year 2003
Planning & Design Criteria to Prevent Architectural Barriers for the Aged and the Physically Handicapped.		International Plumbing Code	2003
		Ashrae/ES Energy Code	2001
		National Electrical Code	2002

A. Occupancy and Group : B / S-1

Change in Use : Yes ☐ No ☒ Mixed Occupancy : Yes ☒ No ☐

B. Type of Construction (Circle)

I	II	III	IV	V
F.R.	F.R.	1 HR.	1 HR.	1 HR.
	B	N	H.T.	N

C. Location on Property : F.R. Ext. Walls (Hrs.): N.R. Ext. Wall Opening(s) Protection (Hrs.): N.R.

D. Occupancy separation required (Hrs.): B/R-2=2 HR

Sprinklered: Indicate **Yes** or No

Stories : **1** or multiple

a. Actual Area² (ft) 21,000 SF APPROX.

b. Basic allowable area : % Area (ft²) % Area (ft²) % Area (ft²)

c. Allowable Area Increase due to side yards: N

d. Side yard area increase (ft): N.A.

Accumulative sub-total (b+d):

Sprinkler: area increase (x3 single) (x 2 multi)

e. Total Allowable Area for a single story: N.A.

x 2 for multi-story building:

f. Ratio = a/e (Actual divided by allowable)

E. Fire-Resistive Requirements (Hrs.): (1 Hr., 2Hr., 3Hr., 4Hr., N. H.T.)

Exterior Bearing Walls:	N	Floors - Ceiling Floors	N
Interior Bearing Walls:	N	Roofs - Ceiling Roofs	N
Exterior Non-bearing Walls:	N	Exterior Doors and Windows	NR
Structural Frame:	N	Shaft Enclosures	1 HR
Partitions - Permanent:	N		

(OCCUPANCY SEPARATION - N.A.)

MECHANICAL LEGEND					
SYMBOL	ABR.	DESCRIPTION	SYMBOL	ABR.	DESCRIPTION
AIR SIDE			WET SIDE		
		EXISTING AIR DUCT TO BE REMOVED			UNION
		EXISTING AIR DUCT TO REMAIN		MU	MAKE-UP WATER
		NEW AIR DUCT		CT	CHEMICAL TREATMENT
		RECT. TO RECT. AIR DUCT TAKE-OFF		M	ELECTRIC MOTOR ACTUATOR
		RECT. TO RND. AIR DUCT TAKE-OFF			FLANGED VALVE CONNECTION
		RND. TO RND. AIR DUCT TAKE-OFF			BUTTERFLY VALVE
		RECT. TAKE-OFF AT END OF MAIN			GATE VALVE
		FLEXIBLE AIR DUCT			MOTORIZED 2-WAY CONTROL VALVE
		LINED DUCT			MOTORIZED 3-WAY CONTROL VALVE
		VANED ELBOW			CHECK VALVE
		RADIUS ELBOW		CBV	CIRCUIT BALANCING VALVE
		CONCENTRIC DUCT TRANSITION		BV	BALL VALVE
		ECCENTRIC DUCT TRANSITION			AUTOMATIC AIR VENT
		FLEXIBLE DUCT CONNECTION			MANUAL AIR VENT
		VOLUME DAMPER			STRAINER
		SUPPLY AIR DIFFUSER			STRAINER W/ PLUGGED BLOW OFF
		RETURN AIR, FRESH AIR, AND TRANSFER AIR			PRESSURE GAUGE AND GAUGE COCK -WATER
		CEILING MOUNTED EXHAUST FAN OR EXHAUST GRILLE			THERMOMETER AND THERMOWELL
		RETURN OR OUTSIDE AIR DUCT UP			WATER TEMPERATURE SENSOR AND THERMOWELL
		SUPPLY DUCT UP			ELBOW UP
		EXHAUST AIR INTAKE UP			ELBOW DOWN
		RETURN OR OUTSIDE AIR DUCT DOWN			TEE UP
		SUPPLY DUCT DOWN			TEE DOWN
		EXHAUST DUCT DOWN		----	EXISTING PIPING TO BE REMOVED
		ROUND DUCT UP		=====	EXISTING PIPING TO REMAIN
		ROUND DUCT DOWN		=====	NEW PIPING
		FLEXIBLE DUCT CONNECTION			PIPE CAP OR PLUG
	AP	ACCESS PANEL			FLEXIBLE CONNECTION
		EXISTING EQUIPMENT TO BE REMOVED		CD	CONDENSATE DRAIN
		EXISTING EQUIPMENT TO REMAIN		HWS	HEATING WATER SUPPLY
		NEW EQUIPMENT		HWR	HEATING WATER RETURN
		WALL MOUNTED TEMP. SENSOR		CHWS	CHILLER WATER SUPPLY
	SA	SUPPLY AIR		CHWR	CHILLED WATER RETURN
	RA	RETURN AIR		FS	FLOW SWITCH
	EA	EXHAUST AIR			PRESSURE REDUCUING VALVE
	OA	OUTSIDE AIR			
	MA	MIXED AIR			
	FA	FRESH AIR			
	RF	RELIEF AIR			
GENERAL TERMINOLOGY					
	A	SECTION LETTER DESIGNATION		①	KEY NOTE DESIGNATOR AND NUMBER
	ME-501	SECTION DRAWN ON THIS SHEET		POC	POINT OF CONNECTION
	A2	DETAIL NUMBER DESIGNATION		POR	POINT OF REMOVAL
		CORRESPONDING WITH GRID LOCATION		GC	GENERAL CONTRACTOR
	AH	MECHANICAL EQUIPMENT DESIGNATION		MC	MECHANICAL CONTRACTOR
	1	EQUIPMENT ITEM DESIGNATION		CC	CONTROL CONTRACTOR
	D-1 CFM	REGISTER, GRILLE OR DIFFUSER DESIGNATION WITH BALANCING CFM LISTED BELOW		EC	ELECTRICAL CONTRACTOR
	R-1	GRILLE, OR LOUVER DESIGNATION WHERE BALANCING NOT REQUIRED		FPC	FIRE PROTECTION CONTRACTOR
		REVISION DESIGNATOR AND NUMBER		NIC	NOT IN CONTRACT
				NTS	NOT TO SCALE
				C	COMMON
				NC	NORMALLY CLOSED
				NO	NORMALLY OPEN

MECHANICAL GENERAL NOTES:

- G-1

MECHANICAL INFORMATION IS LIMITED TO THE MECHANICAL AND CONTROLS.
- A

EACH DRAWING SHEET AND THE SPECIFICATIONS HAVE BEEN PREPARED TO SUPPLEMENT EACH OTHER AND THEY SHALL BE INTERPRETED AS AN INTEGRAL UNIT WITH ITEMS SHOWN AND NOTED ON ONE AND NOT THE OTHER BEING FURNISHED AND INSTALLED AS THOUGH SHOWN AND CALLED OUT IN ALL PLACES. ITEMS IN SPECIFICATIONS OR DRAWINGS LISTED WHICH ARE DIFFERING IN EFFICIENCY OR QUALITY SHALL BE HELD TO THE GREATEST OF: EFFICIENCY, QUALITY OR GOVERNING CODE.
- B

THE CONTRACTOR WILL BE HELD RESPONSIBLE FOR THE INSTALLATION OF THE SYSTEMS ACCORDING TO THE TRUE INTENT AND MEANING OF THE CONTRACT DOCUMENTS.
- C

THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT WITH PROPER SERVICE ACCESS AND CLEARANCES ACCORDING TO MANUFACTURERS RECOMMENDATIONS. THE CONTRACTOR SHALL REVIEW SUPPLIERS BID PACKAGES FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS, SCHEDULES, AND DESIGN INTENT (ALL EQUIPMENT AND METHODS). THE CONTRACTOR SHALL REMOVE AND REINSTALL CORRECTLY AT HIS OWN EXPENSE ANY EQUIPMENT NOT IN COMPLIANCE.
- D

THE CONTRACTOR SHALL CONSULT MANUFACTURERS INSTALLATION INSTRUCTIONS FOR SIZES, METHODS, ACCESSORIES, AND CLEARANCES IN SPACE AVAILABLE PRIOR TO BIDDING PROJECT.
- E

ANYTHING NOT CLEAR OR IN CONFLICT WILL BE EXPLAINED BY MAKING APPLICATION TO THE ENGINEER IN WRITING.
- G-2

ANY AND ALL ALTERATIONS BY THE CONTRACTOR TO THE SYSTEM SHOWN SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR. ENGINEER SHALL BE NOTIFIED IN WRITING PRIOR TO CHANGES.
- G-3

CONTRACTOR SHALL FIELD VERIFY ALL DIMENSION LOCATIONS OF PIPING, EQUIPMENT, CONTROLS, ELECTRICAL SUPPORTS ETC.
- G-4

THE WORKING DRAWINGS ARE DIAGRAMMATIC. THEY DO NOT SHOW EVERY OFFSET, BEND, OR ELBOW NECESSARY FOR THE COMPLETE INSTALLATION IN THE SPACE PROVIDED. ALL LOCATIONS FOR MECHANICAL EQUIPMENT SHALL BE FIELD VERIFIED AND COORDINATED WITH ALL DRAWINGS.
- G-5

THE INSTRUCTION TO "PROVIDE" ALSO INCLUDES INSTALLATION.
- G-6

MECHANICAL CONTRACTOR SHALL PROVIDE AND INSTALL SMOKE AND FIRE DAMPERS AS REQUIRED BY LOCAL CODES AND AUTHORITIES.
- G-7

SHEET METAL DUCT SIZES SHOWN ON DRAWINGS ARE FREE AREA DIMENSIONS.
- G-8

PROVIDE AND INSTALL BALANCING DAMPERS IN ALL SUPPLY AIR BRANCH DUCTS. BALANCE TO CFM SHOWN ON PLAN.
- G-9

PROVIDE TURNING VANES IN ALL NEW ELBOWS OF RECTANGULAR DUCT.
- G-10

THE CONTRACTOR SHALL ASSUME ALL RESPONSIBILITY IN HANDLING AND DISPOSING OF REFRIGERANTS, OILS, ETC. ALL SUCH MATERIALS SHALL BE HANDLED, DISPOSED, AND USED ON ACCORDANCE WITH ALL LOCAL, STATE, AND FEDERAL LAWS.
- G-11

C.F.M. LISTED IS ACTUAL AIR.
- G-12

SUPPLIERS SHALL REVIEW ALL DRAWINGS AND THE SPECIFICATIONS PRIOR TO SUBMITTING PRICES TO THE CONTRACTOR. ALL QUESTIONS AND DISCREPANCIES SHALL BE BROUGHT TO THE ENGINEERS ATTENTION PRIOR TO BIDDING.
- G-13

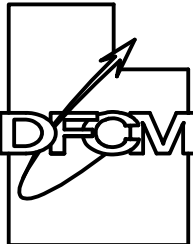
CONTRACTOR SHALL THOROUGHLY REVIEW AND SIGN SUBMITTALS FOR COMPLETENESS AND COMPLIANCE TO THE SPECIFICATIONS PRIOR TO ENGINEERS REVIEW. SUPPLIERS SHALL HIGHLIGHT OR MARK ALL INFORMATION REQUIRED TO SHOW COMPLIANCE TO THE SPECIFICATIONS. ALL REQUESTED EXCEPTIONS TO THE SPECIFICATIONS, OR SCHEDULES SHALL BE CLEARLY NOTED AND EXPLAINED. SUBMITTAL REVIEW AND ACCEPTANCE IS FOR DESIGN CONCEPT ONLY, AND DOES NOT AT ANY TIME RELIEVE THE CONTRACTOR OF RESPONSIBILITY TO MEET SPECIFICATIONS, CAPACITIES, OR DESIGN INTENT.
- G-14

ALL MECHANICAL SHALL BE INSTALLED AND CONFORM TO THE 2003 EDITION OF THE IMC AND IPC WITH UTAH ANNOTATIONS.
- G-15

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR THE DRAINING DOWN AND RE-FILLING OF ALL HYDRONIC SYSTEMS NECESSARY TO COMPLETE THE WORK OUTLINED BY THIS PROJECT. THIS INCLUDES PROVIDING THE REQUIRED CHEMICAL TREATMENT WHEN RE-FILLING THE SYSTEM.
- G-16

THIS CONTRACTOR SHALL BE RESPONSIBLE FOR CUTTING, PATCHING, PAINTING, AND REPAIRING OF EXISTING WALLS, CEILINGS, FINISHES, ETC. AS NECESSARY TO ACCOMPLISH THE WORK CALLED OUT IN THE DRAWINGS AND SPECIFICATIONS.

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PROJECT NAME & ADDRESS

**SOUTHWESTERN
YOUTH FACILITY
HVAC SYSTEM
UPGRADE**

**DIVISION OF YOUTH
CORRECTIONS**

DFCM No. 05128430

Cedar City, Utah

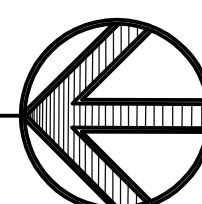
MARK	DATE	REVISION

PROJECT MANAGER: SLW		
DRAWN BY:	LGD	
CHECKED BY:	SLW	
DATE:	02/08/06	
WHW JOB NO.:	05020	
SHEET TITLE		

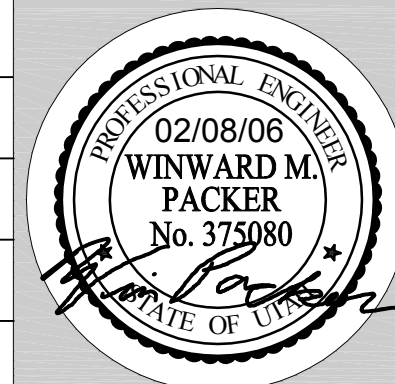
**MECHANICAL GENERAL
NOTES AND LEGEND**

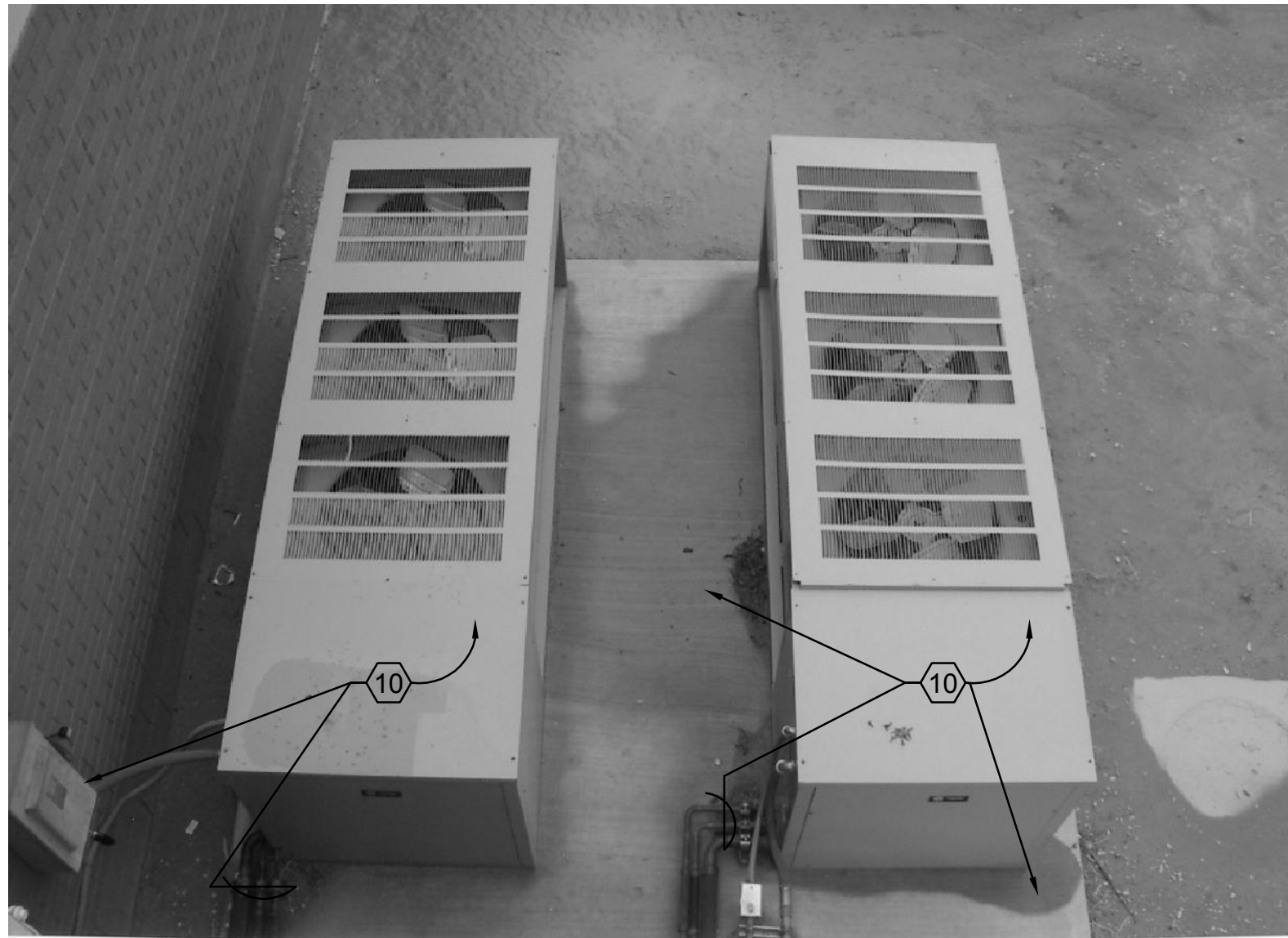
SHEET NO.

M001

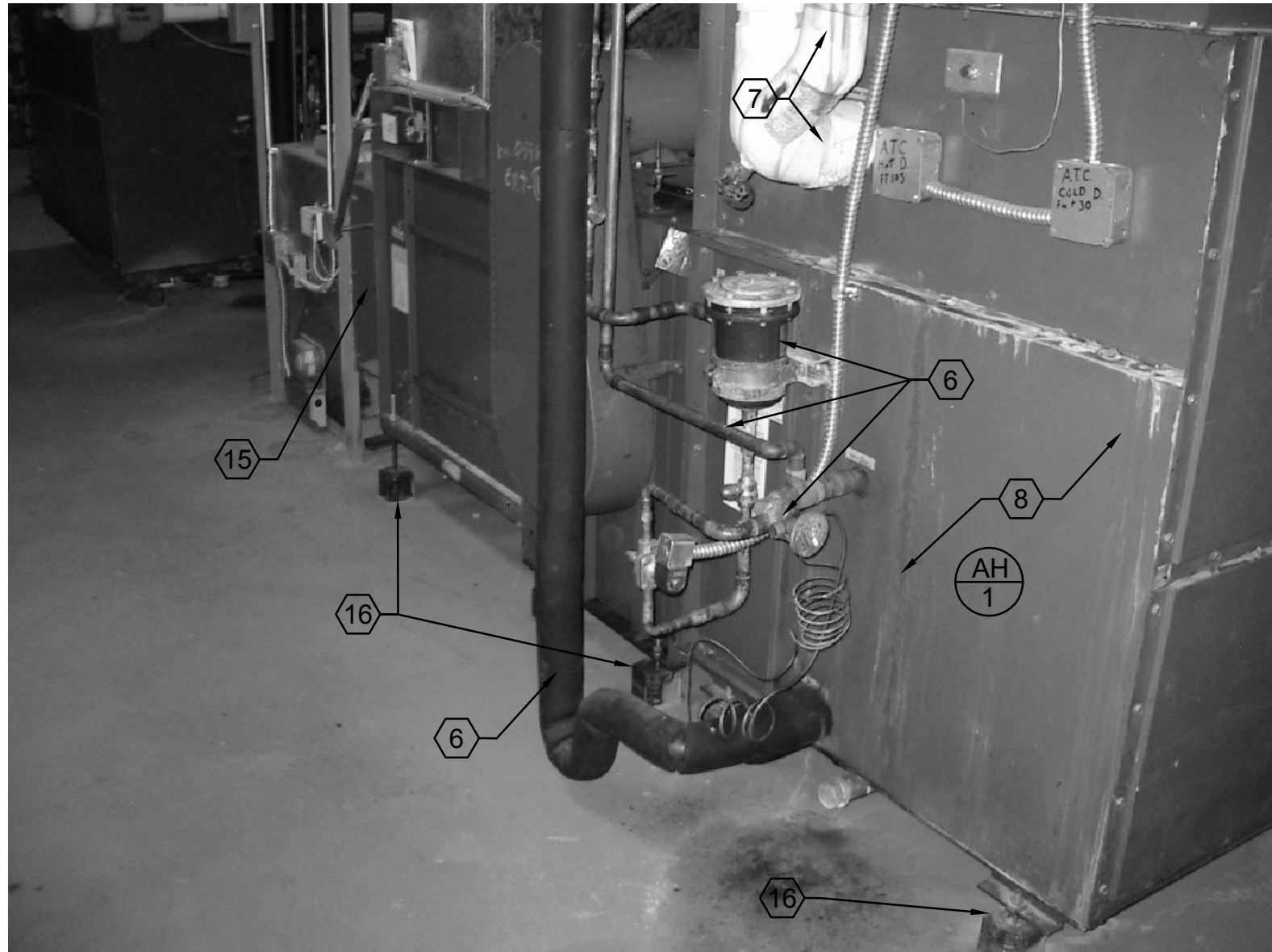


MD101

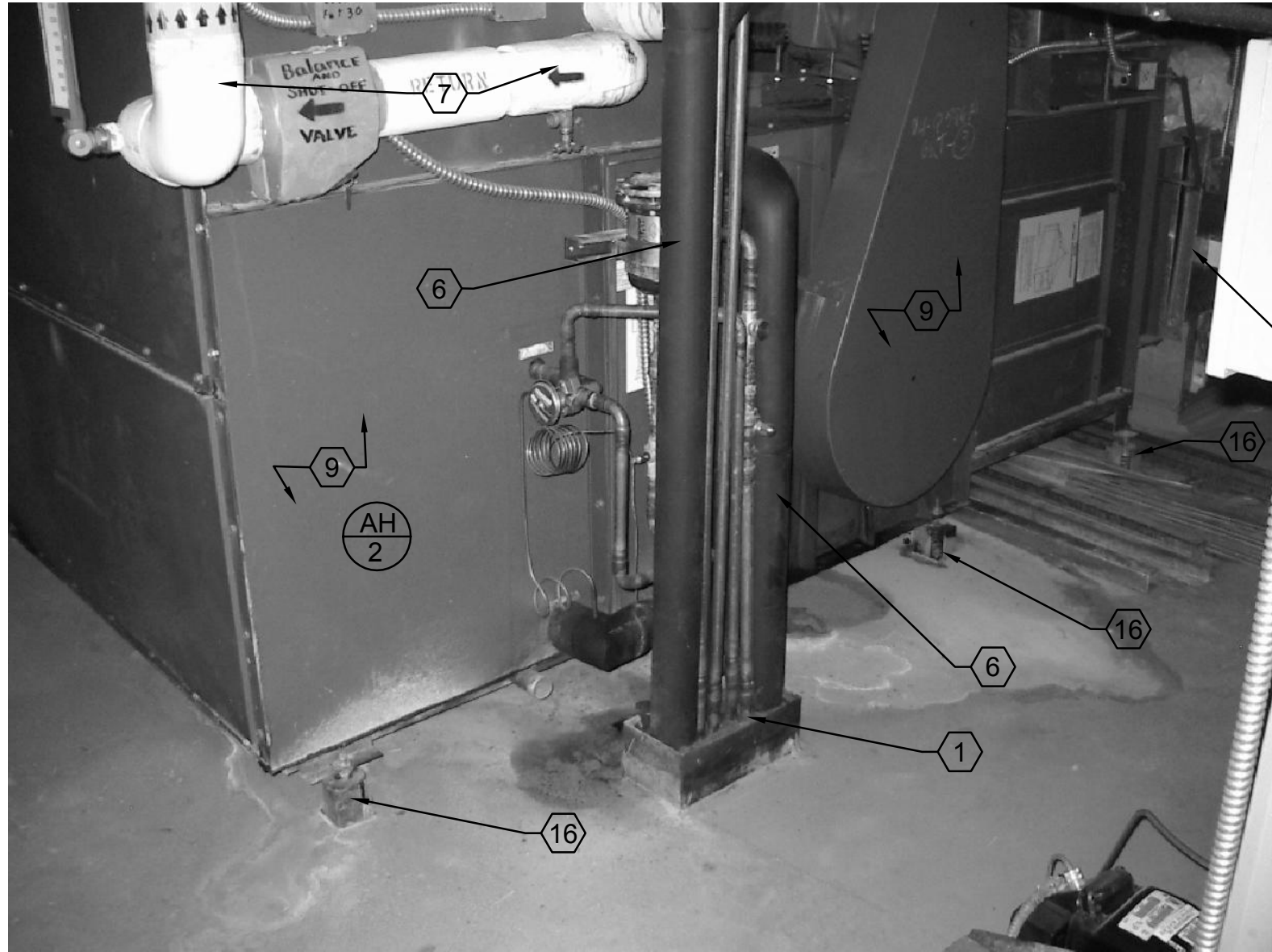




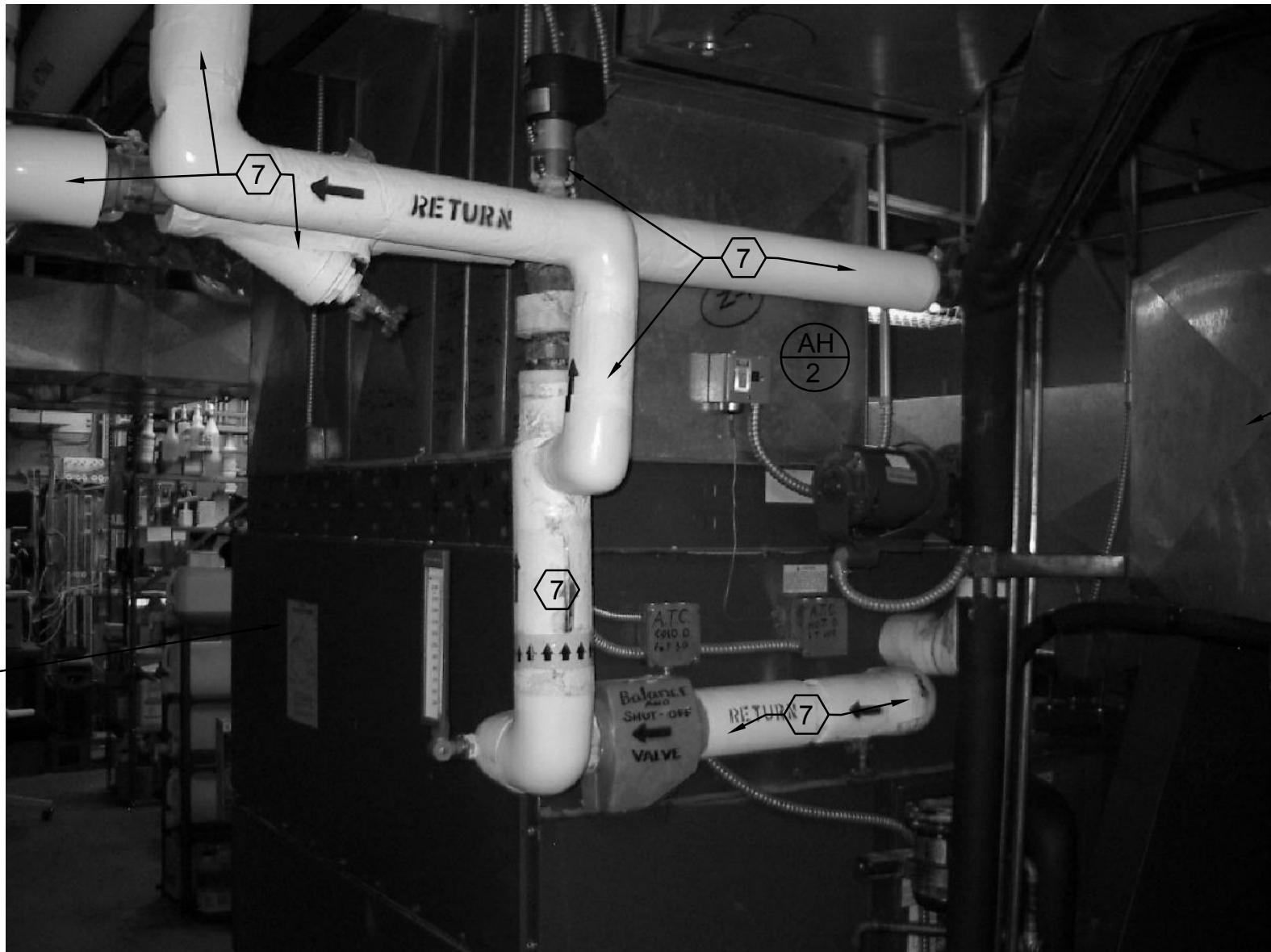
D1 AIR COOLED CONDENSING UNITS LOOKING NORTH
SCALE: NONE



B1 AH-1 LOOKING SOUTH EAST
SCALE: NONE



A1 AH-2 LOOKING SOUTH EAST
SCALE: NONE



D3 AH-2 LOOKING EAST
SCALE: NONE



B3 BOILER AND CULINARY HOT WATER GENERATOR ROOM
SCALE: NONE

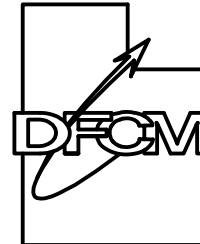


A3 AH-1 LOOKING SOUTH EAST
SCALE: NONE

SHEET NOTES:

- 1 REMOVE EXISTING REFRIGERANT PIPING RISERS TO AIR HANDLING UNIT COILS LOCATED IN MECHANICAL ROOM ABOVE. REMOVE ALL ASSOCIATED HANGERS, SUPPORTS, ETC. FIELD VERIFY EXACT LOCATION AND RESTRICTIONS.
- 2 REMOVE EXISTING CULINARY HOT WATER GENERATOR. DISCONNECT GAS, FLUE, WATER, ETC. AND SAVE FOR RECONNECTION TO NEW HOT WATER GENERATOR.
- 3 REMOVE EXISTING CULINARY HOT WATER STORAGE TANK. DISCONNECT WATER CONNECTIONS AND SAVE FOR RECONNECTION TO NEW STORAGE TANK.
- 4 REMOVE EXISTING CULINARY HOT WATER RECIRCULATING IN-LINE PUMPS. NEW PUMPS SHALL BE LOCATED AS SHOWN ON SHEET ME401.
- 5 EXISTING HOT WATER BOILERS SHALL REMAIN.
- 6 REMOVE EXISTING REFRIGERANT PIPING AND ALL ASSOCIATED VALVES, FILTERS, HANGERS, INSULATION ETC. ASSOCIATED WITH REFRIGERANT PIPING.
- 7 REMOVE EXISTING HEATING HOT WATER COIL CONNECTION PIPING, PUMP, VALVES, CONTROL VALVES, STRAINERS ETC. ASSOCIATED WITH COIL PIPING. REMOVE PIPING BACK TO CONNECTION TO MAINS.
- 8 REMOVE EXISTING AIR HANDLING UNIT AH-1. DISCONNECT FROM ALL DUCTWORK, ELECTRICAL, CONTROLS, PIPING ETC. ASSOCIATED WITH AH-1. SEE SHEET ME401 FOR NEW DUCT CONNECTIONS TO EXISTING REMAINING DUCTWORK.
- 9 REMOVE EXISTING AIR HANDLING UNIT AH-2. DISCONNECT FROM ALL DUCTWORK, ELECTRICAL, CONTROLS, PIPING, ETC. ASSOCIATED WITH AH-2. SEE SHEET ME401 FOR NEW DUCT CONNECTIONS TO EXISTING REMAINING DUCTWORK.
- 10 REMOVE EXISTING AIR COOLED CONDENSING UNITS (TWO) AND ALL REFRIGERANT PIPING, ELECTRICAL, SUPPORTS, ETC. ASSOCIATED WITH CONDENSING UNITS. CONCRETE BASE SHALL REMAIN.
- 11 EXISTING GAS PIPING SHALL REMAIN.
- 12 EXISTING HEATING HOT WATER SUPPLY PIPING SHALL REMAIN. REMOVE ALL INSULATION FROM HOT WATER PIPING, AIR ELIMINATOR, ETC.
- 13 EXISTING FLOOR DRAIN SHALL REMAIN.
- 14 MODIFY F.A. DUCT TO AH-1 FOR CONNECTION TO NEW AH-1. SEE SHEET ME 401.
- 15 R.A. DUCT TO BE REMOVED FROM BOTH EXISTING AH-1 AND AH-2.
- 16 REMOVE SPRING ISOLATORS IF NOT ATTACHED TO UNITS.

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SLW

DRAWN BY:

LGD

CHECKED BY:

SLW

DATE:

02/08/06

WHW JOB NO.:

05020

SHEET TITLE

**MECHANICAL
DEMOLITION**

SHEET NO.

MD102

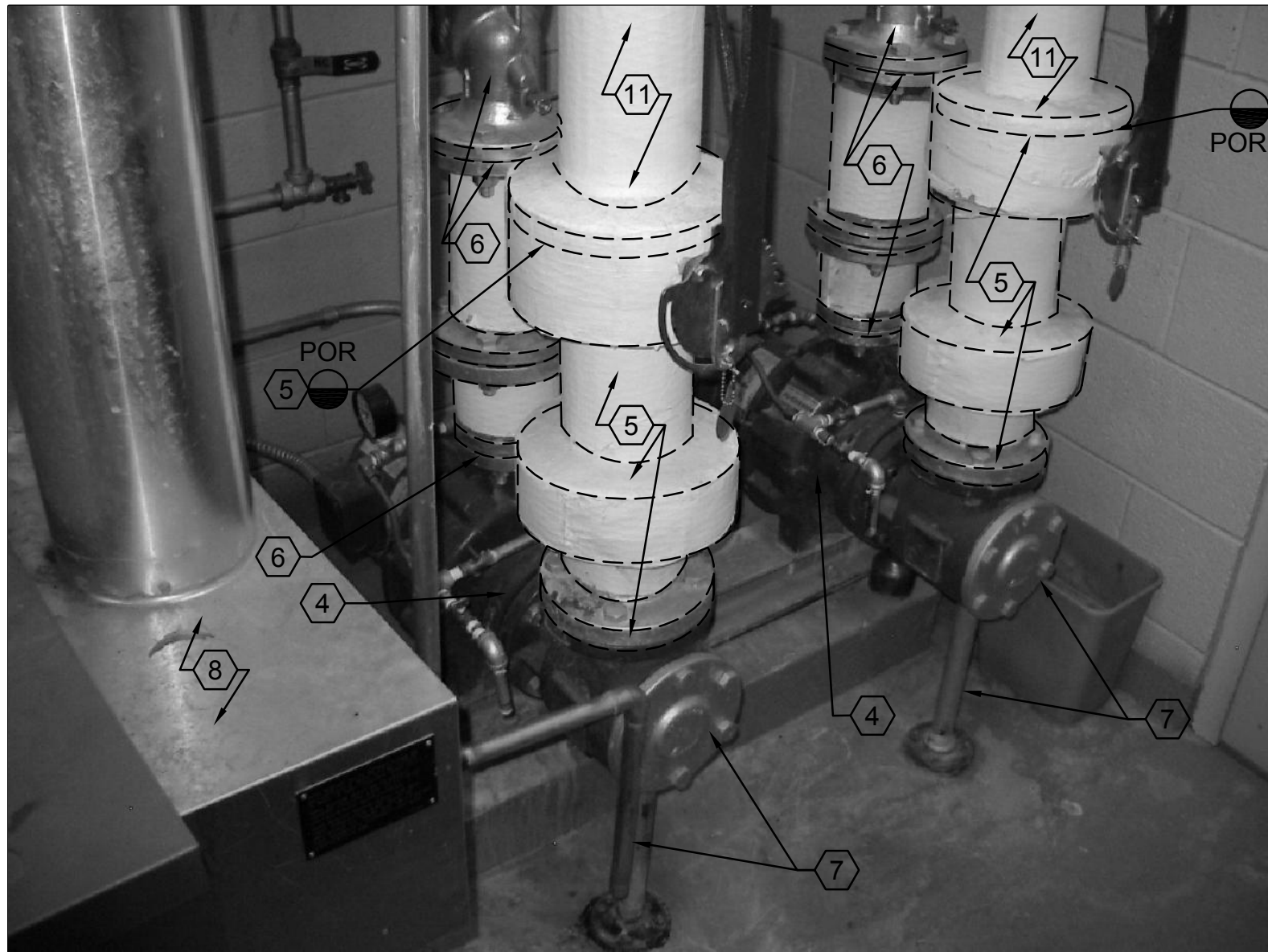




D1 ROOFTOP UNIT
SCALE: NONE



B1 HEATING HOTWATER PIPING
SCALE: NONE



A1 HEATING HOTWATER PUMPS
SCALE: NONE

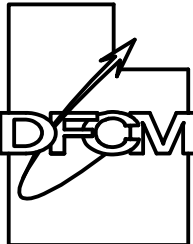


B3 MAKE-UP AIR UNIT
SCALE: NONE

SHEET NOTES:

- 1 REMOVE EXISTING MAKE-UP AIR UNIT AND DUCTWORK TO POINT SHOWN ON SHEE MD401. DISCONNECT FROM GAS, ELECTRICAL, DUCTWORK ETC. ASSOCIATED WITH MAKE-UP AIR UNIT.
- 2 REMOVE FA DUCTWORK TO POINT SHOWN ON SHEET ME401.
- 3 REMOVE SA DUCTWORK TO EXISTING DROPS. SEE SHEET MD401 FOR CONTINUATION.
- 4 REMOVE EXISTING HEATING HOTWATER PUMPS AND PIPING TO POINTS SHOWN.
- 5 REMOVE SUCTION PIPING AND VALVES FROM FLANGE OF VALVE TO SUCTION DIFFUSER.
- 6 REMOVE DISCHARGE PIPING AND VALVES FROM FLANGE DOWN.
- 7 REMOVE SUCTION DIFFUSER AND FLOOR SUPPORT. FLOOR SUPPORTS MAY BE USED FOR NEW INSTALLATION IF POSSIBLE.
- 8 EXISTING HEATING HOTWATER BOILER SHALL REMAIN.
- 9 REMOVE EXISTING ROOFTOP UNIT. DISCONNECT FROM EXISTING ELECTRICAL, GAS, AND DUCTWORK.
- 10 EXISTING EVAP. COOLERS SHALL REMAIN.
- 11 HEATING HOTWATER PIPING SHALL REMAIN.
- 12 REMOVE EXISTING CHECK VALVES.

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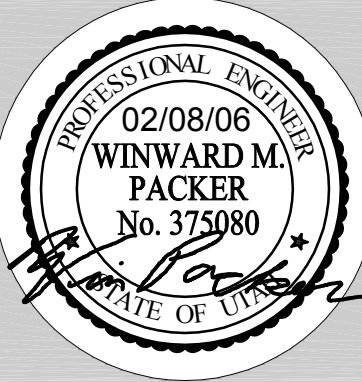
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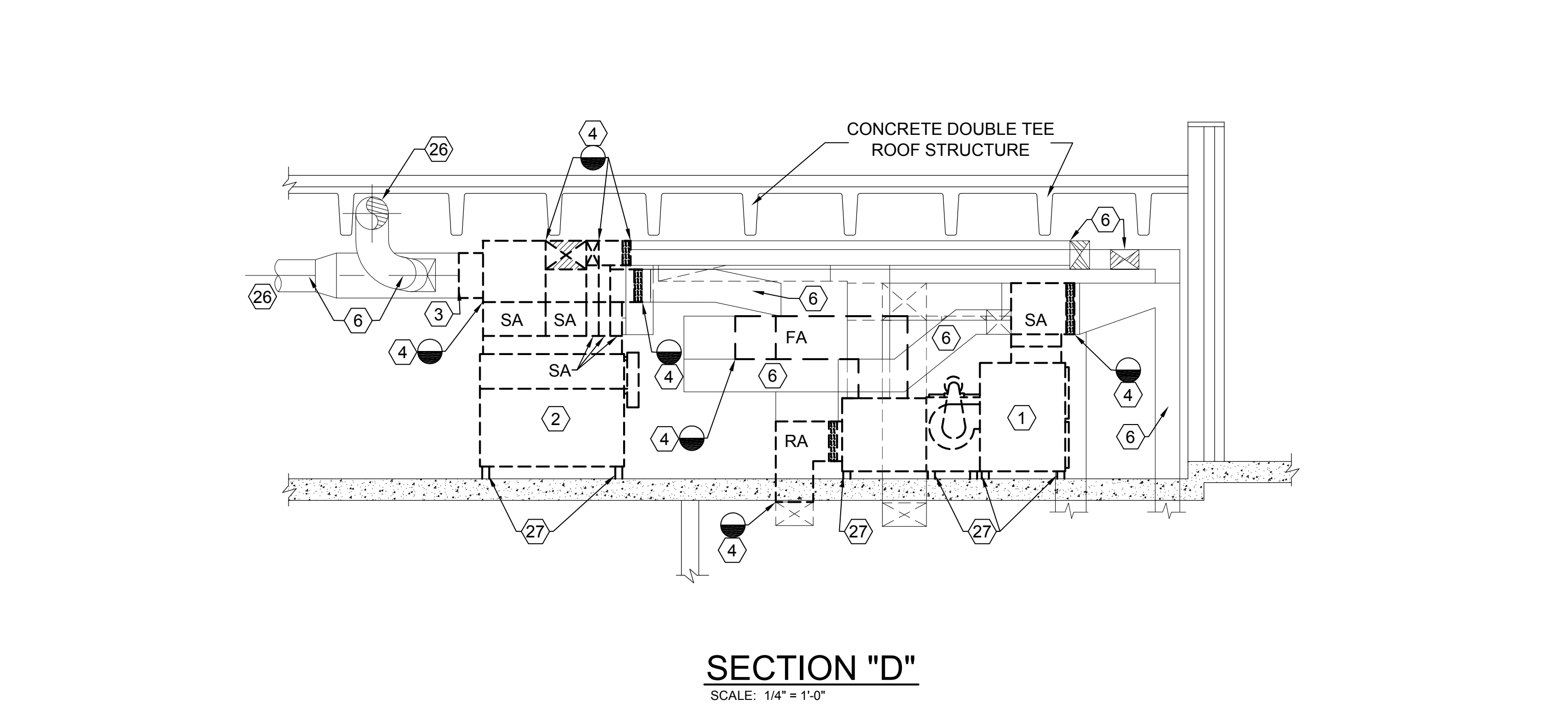
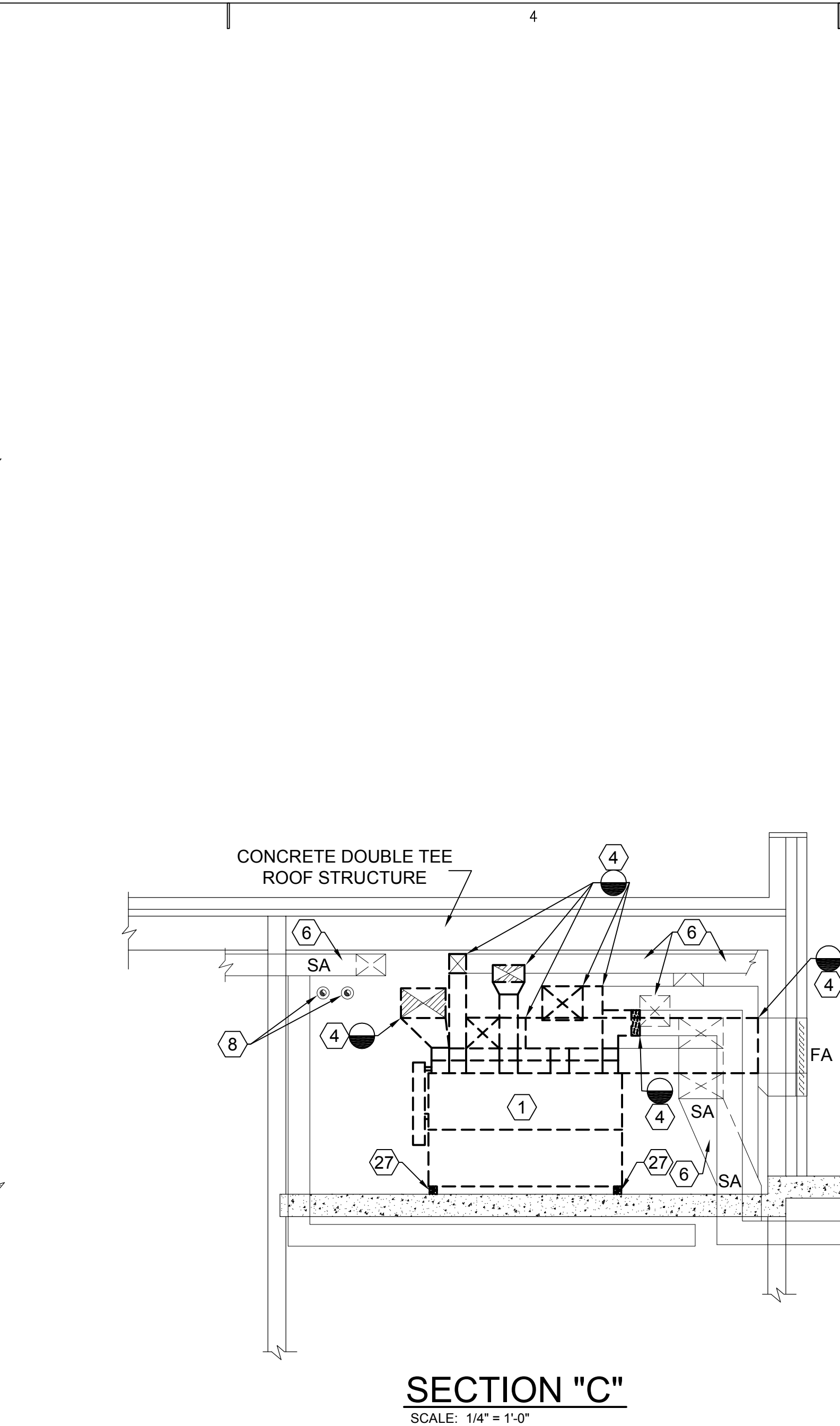
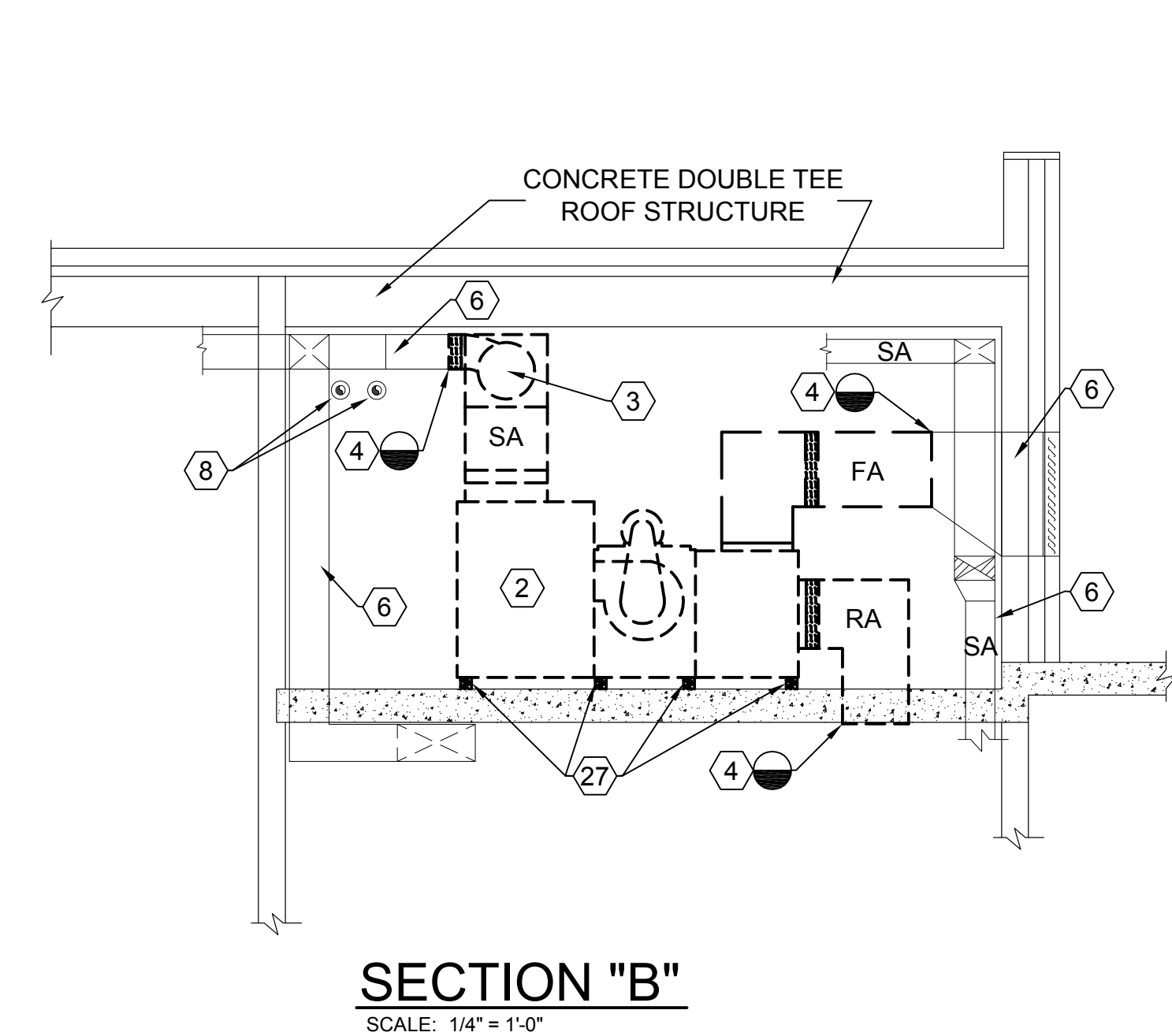
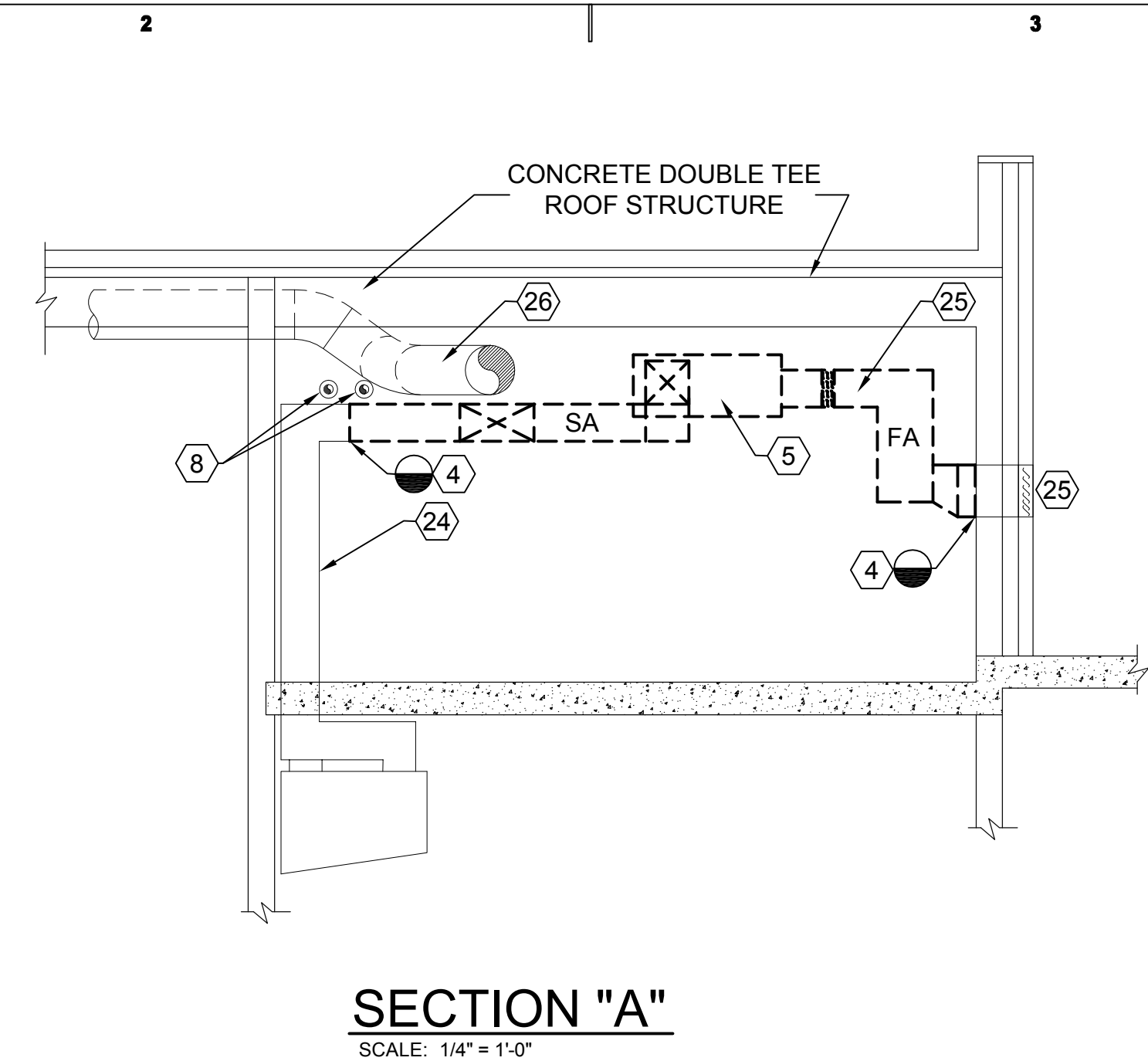
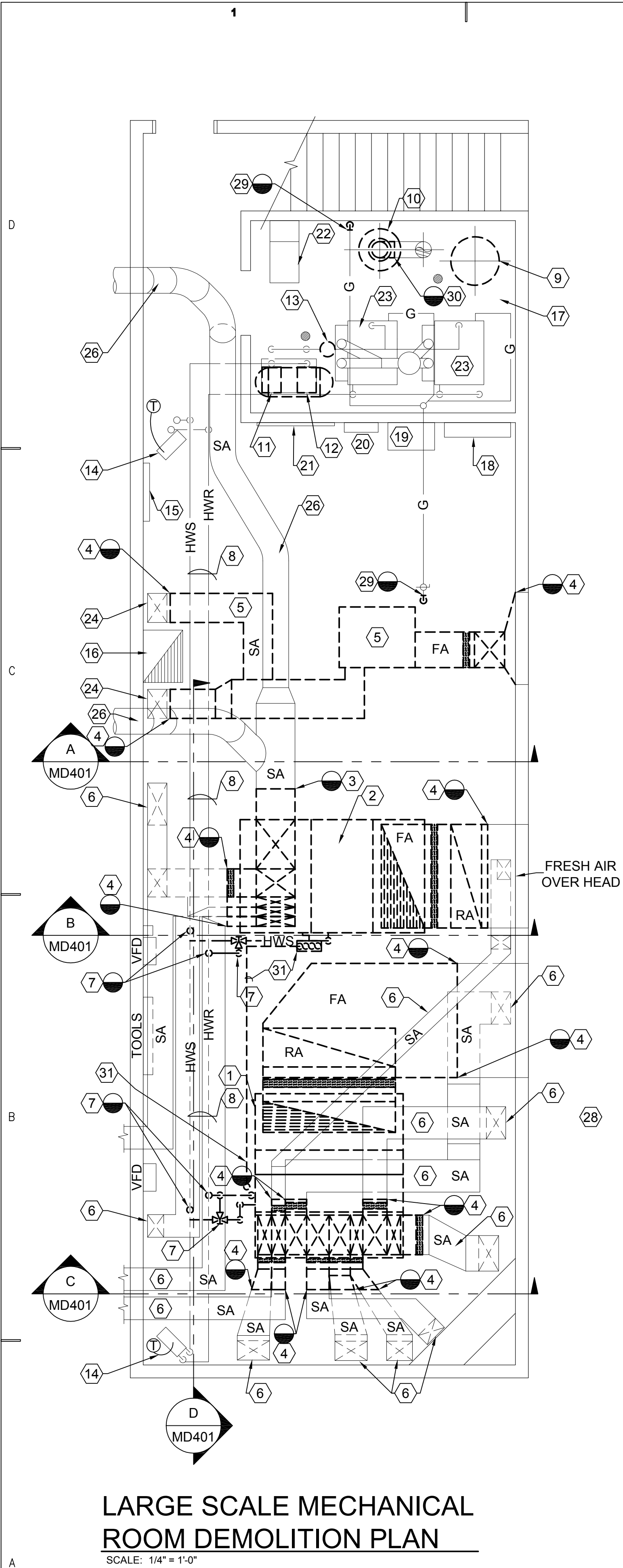
SHEET TITLE



**MECHANICAL
DEMOLITION**

SHEET NO.

MD103



SHEET NOTES:

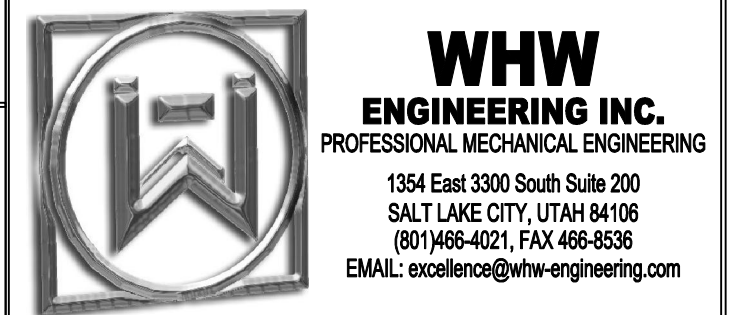
- (1) REMOVE EXISTING MULTIZONE UNIT AH-1 COMPLETE WITH ELECTRICAL CONNECTIONS, DUCTS AND ALL ITEMS NOT RE-USED FOR NEW UNIT INSTALLATION. SEE SHEET ME401 AS WELL AS B-1 AND A-3 SHEET MD102 FOR DUCT CHANGES.
- (2) REMOVE EXISTING MULTIZONE UNIT AH-2 COMPLETE WITH ELECTRICAL CONNECTIONS, DUCTS AND ALL ITEMS NOT RE-USED FOR NEW UNIT INSTALLATION. SEE SHEET ME401 AS WELL AS A-1 AND D-3 SHEET MD102 FOR DUCT CHANGES.
- (3) DISCONNECT ROUND DUCT AND MODIFY FOR NEW CONNECTION INTO NEW UNIT.
- (4) DISCONNECT DUCTWORK WHERE SHOWN FROM EXISTING AIR HANDLING UNITS. MODIFY FOR NEW CONNECTION INTO NEW UNITS.
- (5) REMOVE EXISTING MAKE-UP AIR UNIT INCLUDING GAS, ELECTRICAL, DUCT, AND DUCT CONNECTIONS TO POINTS SHOWN. MODIFY AS POSSIBLE FOR RECONNECTION TO NEW MAKE-UP AIR UNIT. SEE B-3 SHEET MD103.
- (6) EXISTING DUCTWORK SHALL REMAIN.
- (7) REMOVE EXISTING HOT WATER PIPING SERVING COILS IN AH-1 AND AH-2 BACK TO MAINS. SEE A-1, A-3 AND D-3 SHEET MD102.
- (8) MAIN HOT WATER SUPPLY AND RETURN PIPING SHALL REMAIN. REMOVE INSULATION.
- (9) REMOVE EXISTING CULINARY HOT WATER STORAGE TANK. REMOVE PIPING CONNECTIONS AND MODIFY AS REQUIRED FOR RECONNECTION TO NEW HOT WATER STORAGE TANK. SEE B-3 SHEET MD102.
- (10) REMOVE EXISTING CULINARY HOT WATER GENERATOR. REMOVE PIPING AND FLUE CONNECTIONS. MODIFY AS REQUIRED FOR RECONNECTION TO NEW HOT WATER GENERATOR. SEE B-3 SHEET MD102.
- (11) REMOVE TWO EXISTING HEATING HOT WATER PUMPS, VALVES, ETC. SEE DETAIL SHEET ME502 FOR PIPING TO BE REMOVED OR REMAIN AND A-1 SHEET MD103.
- (12) REMOVE EXISTING HORIZONTAL COMPRESSION TANK AND ALL EXISTING HANGERS, SUPPORTS, AND PIPING.
- (13) REMOVE EXISTING AIR ELIMINATOR AND SUPPORTS.
- (14) HOT WATER UNIT HEATERS AND THERMOSTATS SHALL REMAIN.
- (15) EXISTING CONTROL PANEL SHALL REMAIN IF NEEDED BY NEW ATC CONTRACTOR. IF NOT, REMOVE AND SAVE FOR OWNER.
- (16) KITCHEN HOOD EXHAUST DUCT SHALL REMAIN.
- (17) REMOVE BOTH EXISTING INLINE CULINARY HOT WATER CIRCULATION PUMPS. MODIFY PIPING TO ACCEPT NEW INLINE PUMPS. SEE B-3 SHEET MD102.
- (18) EXISTING ELECTRICAL MD. PANEL SHALL REMAIN.
- (19) EXISTING TRANSFER SWITCH SHALL REMAIN.
- (20) EXISTING ELECTRICAL PANEL EM SHALL REMAIN.
- (21) EXISTING TELEPHONE BOARD SHALL REMAIN.
- (22) COMBUSTION AIR DUCT SHALL REMAIN.
- (23) EXISTING GAS FIRED HEATING HOT WATER BOILERS SHALL REMAIN.
- (24) EXISTING MAKE UP AIR DUCT DROP TO KITCHEN HOOD SHALL REMAIN.
- (25) FA DUCT TO REMAIN TO FLEX CONNECTION.
- (26) EXISTING 16" Ø SA DUCT TO GYMNASIUM SHALL REMAIN.
- (27) REMOVE EXISTING SPRING ISOLATORS IF NOT ATTACHED TO CABINET.
- (28) EXISTING DIRECT EVAP. COOLERS SHALL REMAIN.
- (29) REMOVE EXISTING GAS PIPING DROP AT CULINARY HOT WATER GENERATOR AND FROM VALVE TO MAKE-UP AIR UNIT CONNECTION. ALL OTHER GAS PIPING SHALL REMAIN.
- (30) REMOVE EXISTING FLUE TO THIS POINT. FLUE AND RISER THRU ROOF SHALL REMAIN.
- (31) REMOVE EXISTING REFRIGERANT PIPING TO AH-1 AND AH-2 AND ALL VALVES, FILTERS, ETC. SEE A-1 AND B-1 SHEET MD102 FOR DETAILS. SINGLE LINE THIS SHEET INCLUDES (3) PIPES.

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PROJECT NAME & ADDRESS

SOUTHWESTERN YOUTH FACILITY HVAC SYSTEM UPGRADE
DIVISION OF YOUTH CORRECTIONS
DFCM No. 05128430
Cedar City, Utah

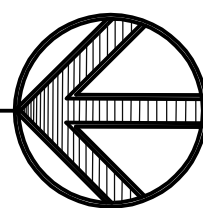
Cedar City, Utah

MARK	DATE	REVISION

PROJECT MANAGER: SLW	
DRAWN BY: LGD	
CHECKED BY: SLW	
DATE: 02/08/06	
WHW JOB NO.: 05020	

LARGE SCALE MECHANICAL ROOM DEMOLITION PLAN AND SECTIONS

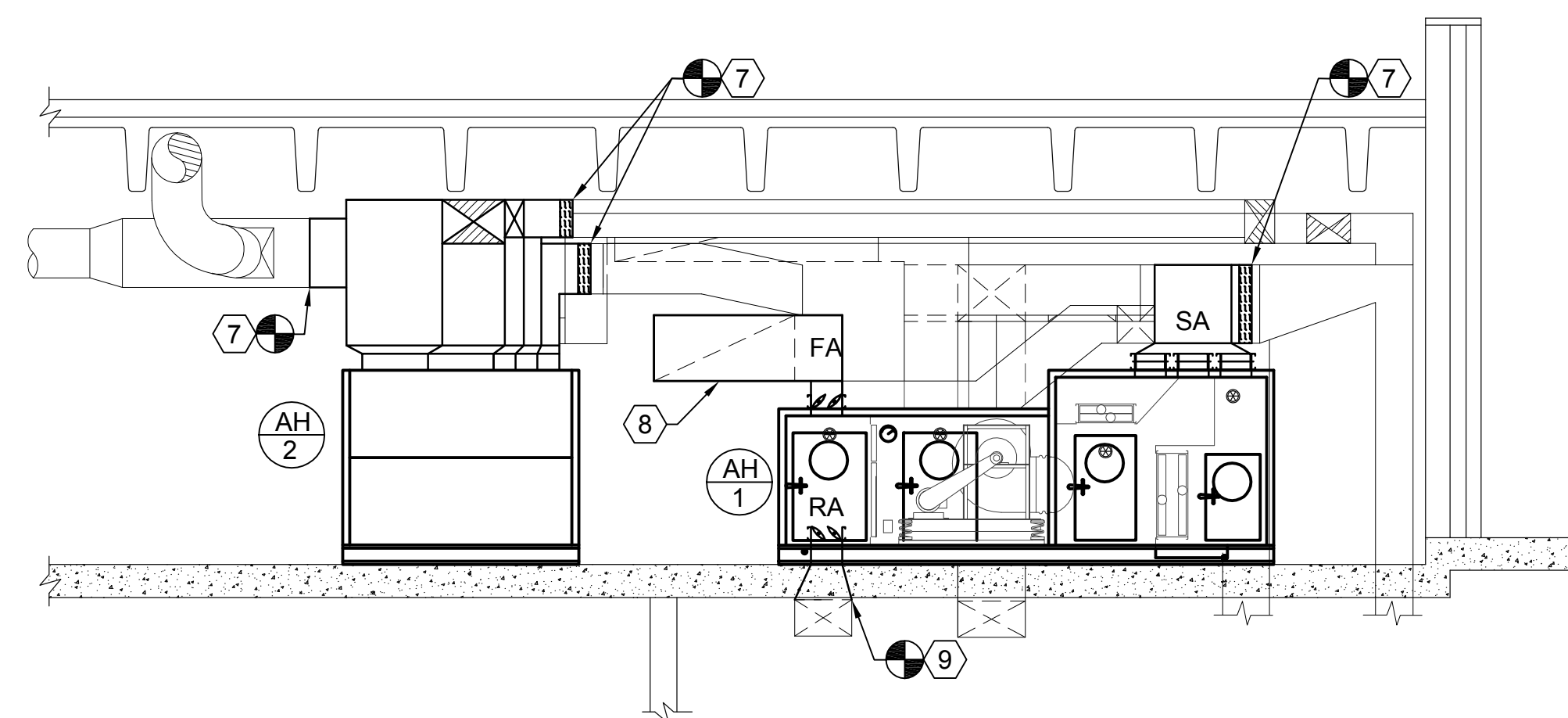
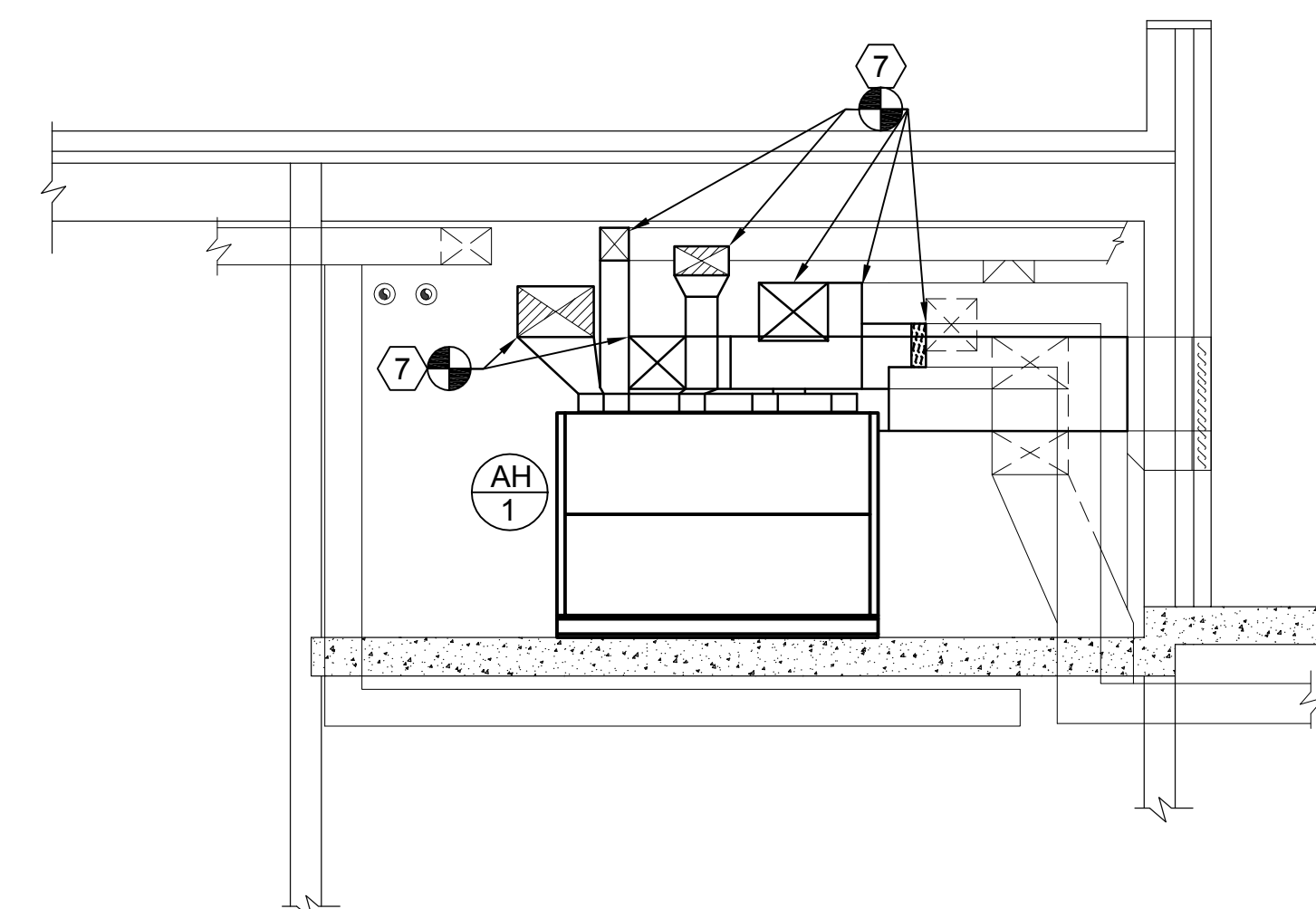
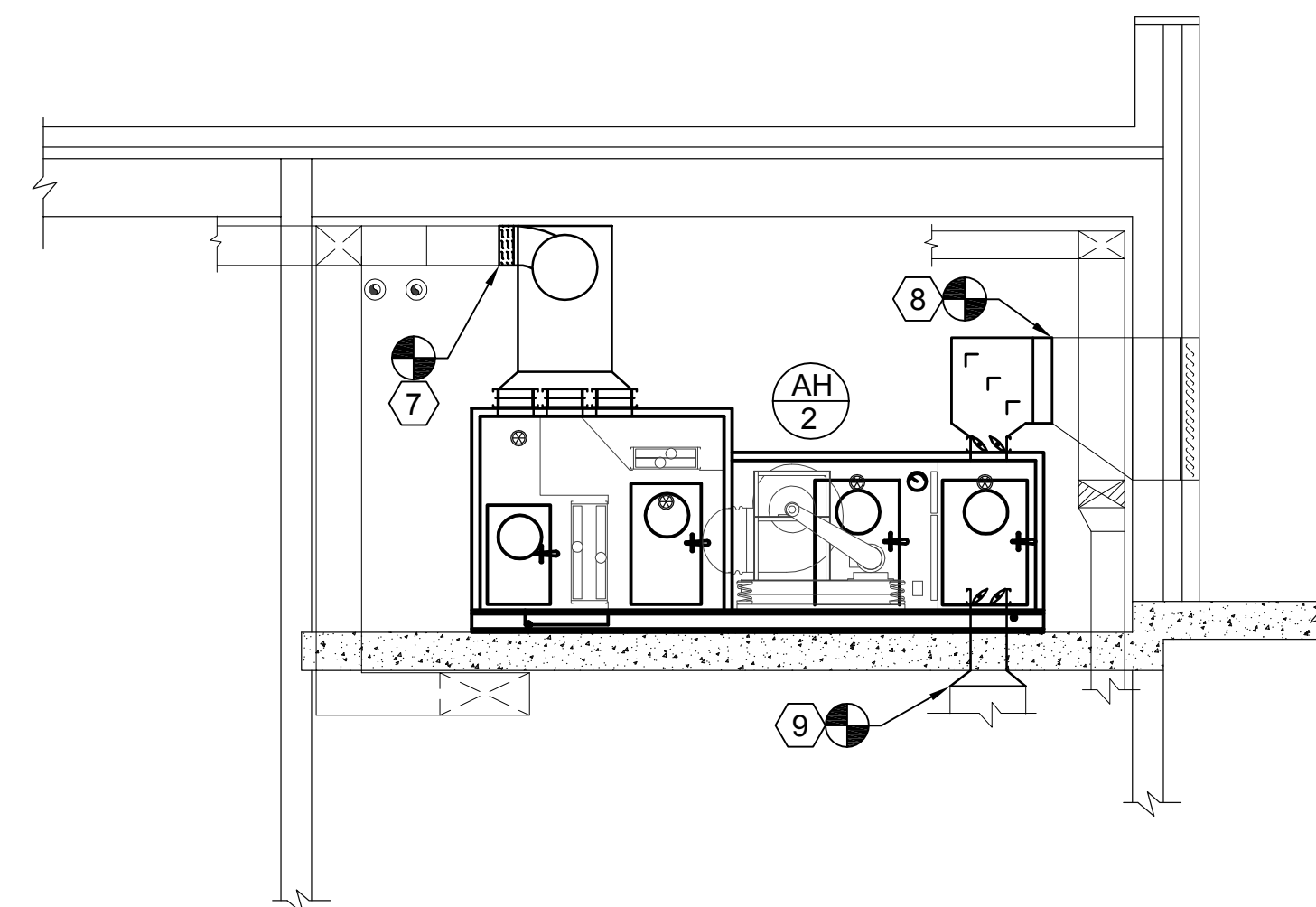
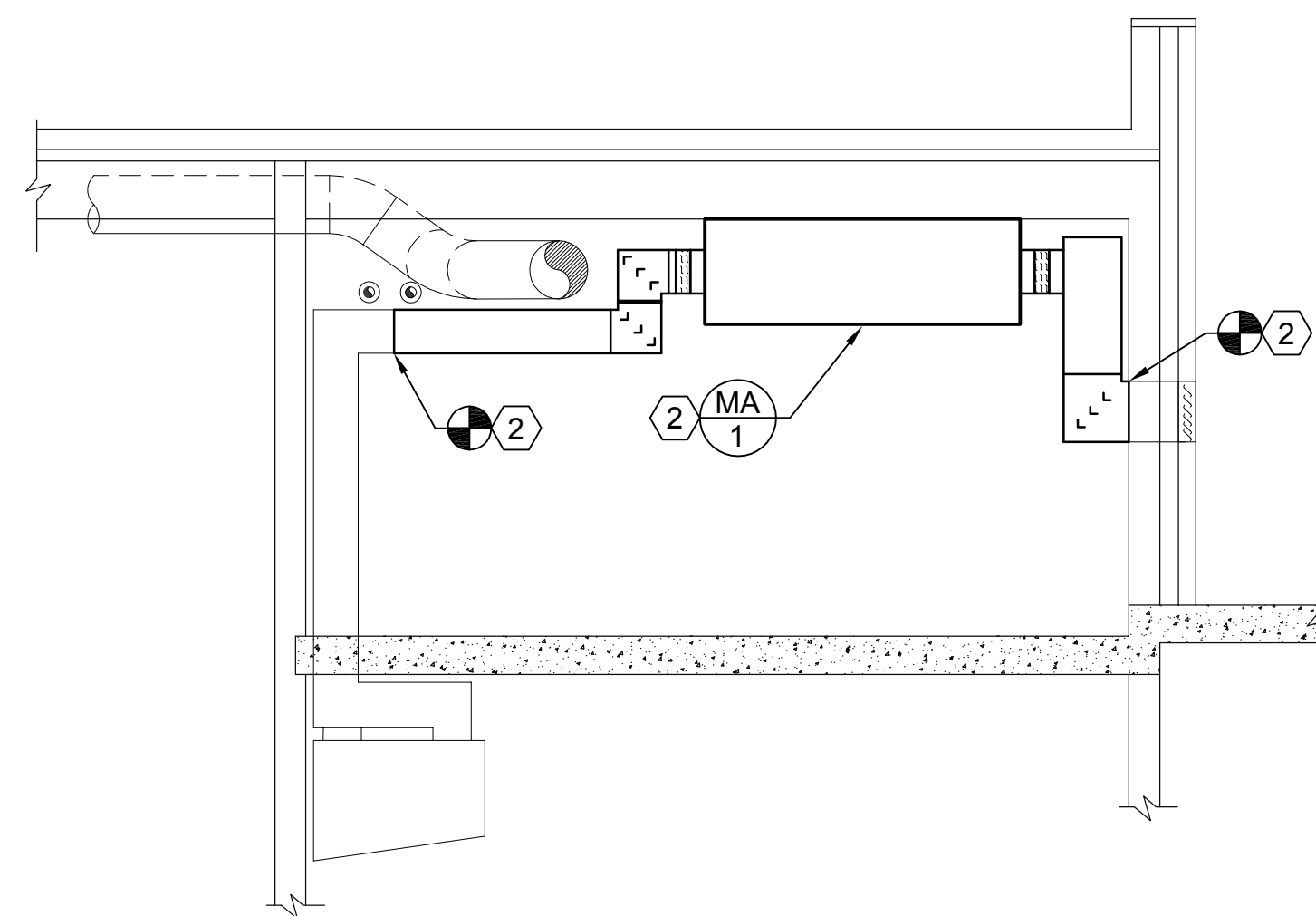
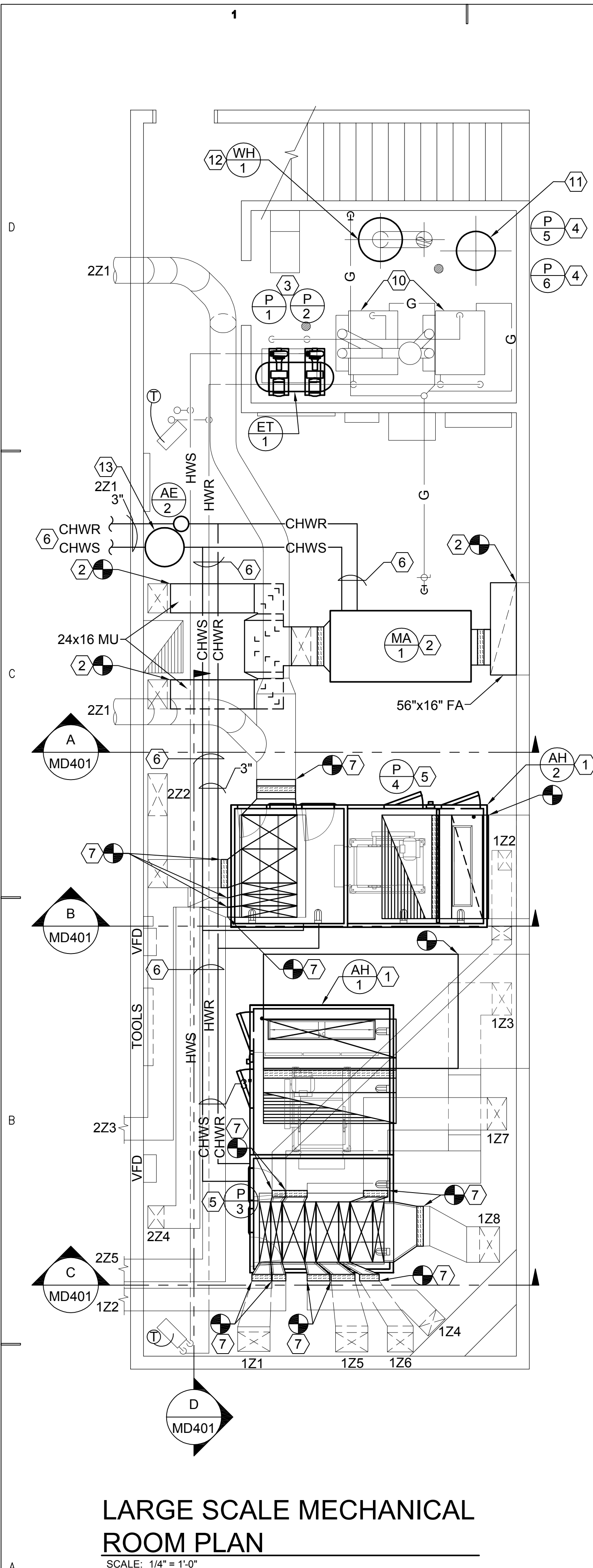
SHEET NO. **MD401**



2. PROVIDE NEW GRILLES WHERE CALLED OUT. MODIFY CEILING OR WALL PENETRATIONS AS NECESSARY. TRANSITION FROM NEW GRILLE TO EXISTING DUCTWORK.

SEE SHEET ME401.

ME101

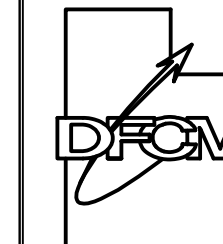


- SHEET NOTES:**
- 1 PROVIDE NEW MULTIZONE AIR HANDLING UNIT. CONNECT NEW ZONE DUCTWORK TO EXISTING ZONE DUCTWORK.
 - 2 PROVIDE NEW GAS FIRED MAKE-UP AIR UNIT. CONNECT NEW DUCTWORK TO EXISTING SUPPLY AND FRESH AIR DUCTWORK AND FLUE.
 - 3 PROVIDE NEW BASE MOUNTED HEATING WATER^Q PUMPS. RE-CONNECT TO EXISTING PIPING WHERE SHOWN ON ME501 AND MD103 A-1 AND B-1.
 - 4 PROVIDE NEW CULINARY HOT WATER PUMPS. RE-CONNECT TO EXISTING PIPING. SEE DETAIL B-3 SHEET MD102.
 - 5 PROVIDE NEW COIL CIRCULATING PUMPS FOR HOT WATER COIL IN AIR HANDLERS. SEE COIL PIPING DETAIL SHEET ME502.
 - 6 PROVIDE NEW CHILLED WATER PIPING, SEE SHEET ME101 FOR CONTINUATION.
 - 7 PROVIDE NEW DUCT TRANSITIONS FROM NEW MULTIZONE UNIT TO EXISTING DUCTWORK. PROVIDE NEW FLEXIBLE DUCT CONNECTIONS. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING DUCT ZONES. COORDINATE MULTIZONE DAMPER SIZES WITH MULTIZONE AIR HANDLER MANUFACTURER. EXISTING DUCTWORK APPROXIMATE SIZES ARE AS FOLLOWS:

AH-1 (NUMBERING LEFT TO RIGHT)
 ZONE 1: 20"x12"
 ZONE 2: 14"x8", 14"x8"
 ZONE 3: 20"x12"
 ZONE 4: 14"x8"
 ZONE 5: 20"x12"
 ZONE 6: 16"x12"
 ZONE 7: 20"x14"
 ZONE 8: 16"x12"

AH-2 (NUMBERING LEFT TO RIGHT)
 ZONE 1: 22"Ø
 ZONE 2: 24"x10"
 ZONE 3: 12"x10"
 ZONE 4: 12"x8"
 ZONE 5: 14"x10"

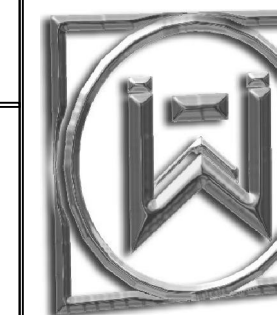
- 8 PROVIDE NEW FRESH AIR DUCT TO NEW MULTIZONE AIR HANDLERS. RE-CONNECT TO EXISTING OUTSIDE AIR DUCTS.
- 9 RE-CONNECT EXISTING RETURN AIR DUCT WORK TO NEW RETURN AIR DAMPER AT NEW AIR HANDLER MIXING BOX. FIELD VERIFY EXACT SIZE AND LOCATION OF EXISTING RETURN, AND COORDINATE WITH AIR HANDLER MANUFACTURER.
- 10 EXISTING 16" Ø S.A. DUCT TO MULTI PURPOSE ROOM. SEE SHEET ME101 FOR CONTINUATION. B
- 11 PROVIDE NEW DOMESTIC WATER STORAGE TANK.
- 12 PROVIDE NEW DOMESTIC WATER HEATER. PIPE PER DETAILS.
- 13 PROVIDE NEW GLYCOL FEEDER FOR NEW CHILLED WATER SYSTEM. SEE DETAIL. FIELD VERIFY BEST LOCATION.



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SOUTHWESTERN YOUTH FACILITY HVAC SYSTEM UPGRADE

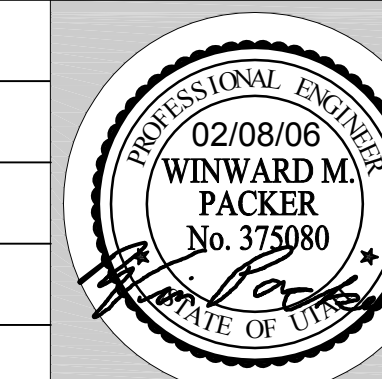
DIVISION OF YOUTH CORRECTIONS

DFCM No. 05128430

Cedar City, Utah

MARK	DATE	REVISION

A	PROJECT MANAGER:	SLW
	DRAWN BY:	LGD
	CHECKED BY:	SLW
	DATE:	02/08/06
	WHW JOB NO.:	05020



LARGE SCALE MECHANICAL ROOM REMODEL PLAN AND SECTIONS

SHEET NO.

ME401

INDOOR MULTI-ZONE AIR HANDLING UNIT SCHEDULE

SYMBOL	COOLING CFM	O.A. CFM	HEATING SIZE CFM	UNIT H (INCHES)	UNIT W (INCHES)	UNIT L (INCHES)	ESP ARR.	FAN MOTOR				CW COOLING COIL CAPACITY									HOT WATER HEATING COIL							MANUF. & MODEL #	SCHEDULE NOTES	
								HP	VOLT	PHASE	CYCLE	MAX AIR PD. IN WG.	TOTAL MBH	TONS COOL	GPM	EWT	LWT	EAD B	EAWB	LAT	MAX AIR PD.	MBH	GPM	EAT	LAT	MAX WATER PD.	WATER INLET TEMP			WATER OUTLET TEMP
<div><div>AH1</div></div>	6515	1500	6280	62"/54"	89"	166"	1.75"	7.5	208	3	60	0.75"	188.4	15.7	38	45	55	80	65	55	0.5"	252	25	65	105	5.0	180	160	HAAKON	1,2
<div><div>AH2</div></div>	5450	1300	5160	62"/50"	75.5"	159"	1.75"	5	208	3	60	0.75"	154.8	12.9	31	45	55	80	65	55	0.5"	207	21	65	105	5.0	180	160	HAAKON	1,2
1. SEE DRAWINGS FOR EXACT CONFIGURATION, SIZE, ETC.																														
2. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.																														
3. PROVIDE WITH HOT DECK, COLD DECK, AND NEUTRAL DECK FOR EACH ZONE. SEE SECTIONS, PLANS AND DETAILS..																														
4. PROVIDE WITH 8 ZONES. SEE DRAWINGS FOR DUCT CONNNECTION SIZES. MINIMUM CFM AND DAMPER SIZES PER DAMPER AT EACH DECK: ZONE 1 - 925 CFM 7x12, ZONE 2 - 700 CFM 7x12, ZONE 3 - 1035 CFM 14x12 ,ZONE 4 - 255 CFM 7x12, ZONE 5 - 1090 CFM 14x12, ZONE 6 - 760 CFM 7x12, ZONE 7 - 990 CFM 14x12, ZONE 8 - 760 CFM 7x12																														
5. PROVIDE WITH 5 ZONES. SEE DRAWINGS FOR DUCT CONNNECTION SIZES. MINIMUM CFM AND DAMPER SIZES PER DAMPER AT EACH DECK: ZONE 1 - 2720 CFM 21x12, ZONE 2 - 1360 CFM 21x12, ZONE 3 - 475 CFM 7x12 ,ZONE 4 - 400 CFM 7x12, ZONE 5 - 495 CFM 7x12																														

HOT WATER GENERATOR SCHEDULE

SYMBOL	INPUT MBTUH	OUTPUT MBTUH	DIAMETER	HEIGHT	FLUE	CW INLET	HW OUTLET	GAS CONNECTION	MANUFACTIRER	NOTES
<div>ⓘ</div> <div>WH1</div>	420	344,400	27"	57-1/8"	10"	1-1/2"	1-1/2"	1"	A.O. SMITH HW420	1,2
<div>1. PROVIDE WITH STORAGE TANK, PIPING AND PUMPS. SEE SHEETME502 FOR DETAIL. TANK SHALL BE VERTICAL, 125 GAL., MAXIMUM SIZE 24" DIAMETER X 66" HIGH. GLASS LINED.</div> <div>2. HOT WATER GENERTATOR, STORAGE TANK, INTERCONNECTED PIPING AND PUMPS SHALL BE SKID MOUNTED</div> <div>3. SEE SPECIFICATIONS.</div>										

HOT WATER UNIT HEATER SCHEDULE

SYMBOL	BTU OUTPUT	GPM	PRESS. DROP (ft.)	MOTOR HP/ SERVICE	CFM	MAKE AND MODEL #	SCHEDULE NOTES
<div>ⓘ</div> <div>UH2</div>	16,200	1.7	0.8	1/25 120/1/60	370	MODINE HS-24	1
<div>1. SIZE BASE ON 180°F EWT, 60°F EAT</div>							

PUMP SCHEDULE

SYMBOL	TYPE	GPM	FT. HEAD	SUCTION SIZE	DISCHARGE SIZE	MOTOR			SIZE	SERVICE	COMMENTS	SCHEDULE NOTES
						V - Ø - Hz	HP	RPM				
<div><div>P</div><div>1</div></div>	BASE MTD	58	40	1.5	1.25	208-3-60	1.5	1750	1-1/4 AC	HEATING WATER	BELL & GOSSETT 1510	1,2,3
<div><div>P</div><div>2</div></div>	BASE MTD	58	40	1.5	1.25	208-3-60	1.5	1750	1-1/4 AC	HEATING WATER	BELL & GOSSETT 1510	1,2,3
<div><div>P</div><div>3</div></div>	IN-LINE	30	15	1.25	1.25	120-1-60	1/3	1750	1-1/4x 5-1/4	AH-1 HEAT COIL	BELL & GOSSETT SERIES 60	2,3
<div><div>P</div><div>4</div></div>	IN-LINE	25	15	1	1	120-1-60	1/3	1750	1x5-1/4	AH-2 HEAT COIL	BELL & GOSSETT SERIES 60	2,3
<div><div>P</div><div>5</div></div>	IN-LINE	20	10	1.25	1.25	120-1-60	1/6	1750	1-1/4"	DOMESTIC HOT WATER	BELL & GOSSETT SERIES HV	2,3
<div><div>P</div><div>6</div></div>	IN-LINE	20	10	1.25	1.25	120-1-60	1/6	1750	1-1/4"	DOMESTIC HOT WATER	BELL & GOSSETT SERIES HV	2,3
<div><div>P</div><div>7</div></div>	PROVIDED AS PART OF CHILLER PACKAGE											
<div><div>P</div><div>8</div></div>	PROVIDED AS PART OF CHILLER PACKAGE											
1. PROVIDE REMOVABLE INSULATION KIT AROUND PUMP. SEE SPECIFICATIONS.												
2. ALL PUMPS SHALL BE SIZED IN THE FLAT PART OF THE CURVE.												
3. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.												

AIR ELIMINATOR SCHEDULE

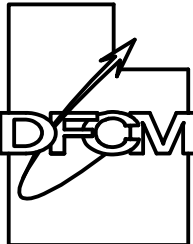
SYMBOL	CAPACITY GPM	MAX PRESSURE DROP FT.	INLET / OUTLET SIZE	WEIGHT LBS	MAKE & MODEL	COMMENTS	SCHEDULE NOTES
<div>ⓘ</div> <div>AE1</div>	85	0.5	3"	120	BELL & GOSSETT RL3		1
<div>1. FOR OTHER APPROVED MANUFACTURERS SEE SPECIFICATIONS.</div>							

EXPANSION TANK SCHEDULE

SYMBOL	ACCEPT TANK VOLUME GAL.	LENGTH	DIAMETER	OPERATION WEIGHT LBS	COMMENTS	SCHEDULE NOTES
<div><div>ET</div><div>1</div></div>	77	46"	24"	266	BELL & GOSSETT D-144	1, 2
<div><div>ET</div><div>2</div></div>	PROVIDED AS PART OF CHILLER PACKAGE					
1. FOR OTHER APPROVED MANUFACTURERS SEE SPECIFICATIONS.						
2. HORIZONTAL DIAPHRAGM TYPE TANK.						

INDIRECT GAS FIRED MAKE-UP AIR UNIT SCHEDULE

SYMBOL	INPUT MBH	C.F.M.	ESP IN W.C.	ENT. AIR TEMP	AIR TEMP RISE	CHW COOLING COIL							MOTOR		MANUF. & MODEL #	SCHEDULE NOTES
						AIR PD	TOTAL MBH	GPM	EWT	LWT	EADB	LADB	V - Ø - Hz	HP		
<div>MA 1</div>	140	1600	0.90"	0	60	0.25	76.5	16	45	55	95	55	208-3-60	1.5	SYSTEM-AIRE BY TRANE	1,2,3
1. PROVIDE WITH A MODULATING GAS VALVE.																
2. CONDITIONS AT SEA LEVEL.																
3. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.																



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PROJECT NAME & ADDRESS

**SOUTHWESTERN
YOUTH FACILITY
HVAC SYSTEM
UPGRADE**

**DIVISION OF YOUTH
CORRECTIONS**

DFCM No. 05128430

Cedar City, Utah

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05020
SHEET TITLE



MECHANICAL SCHEDULES

SHEET NO.

ME601

REGISTER, LOUVER & GRILLE SCHEDULE							
SYMBOL	TYPE	SERVICE	MAX CFM	NOMINAL SIZE	THROAT SIZE	COMMENTS	SCHEDULE NOTES
<div>R-1</div>	CEILING	RA	400	12X12	12X12	PRICE 535	1, 2, 3
<div>DG-1</div>	DOOR GRILLE	TA	150	12X10	12X10	PRICE STG1	1, 2, 4
<div>D-1</div> <div>CFM</div>	DRUM LOUVER	SA	680	20X12	20X12	TITUS PUNKA	1, 2, 3
<div>LD-1</div> <div>CFM</div>	LINEAR CELING	SA	190	30X6	8"Ø	PRICE ASP TWO 1.0" SLOTS	1, 2, 3, 5
<div>LD-2</div> <div>CFM</div>	LINEAR CEILING	SA	300	48X6	10"Ø	PRICE ASP TWO 1.0" SLOTS	1, 2, 3, 5
<div>S-1</div> <div>CFM</div>	SIDEWALL SUPPLY	SA	190	12X6	12X6	PRICE MSSG	1, 2, 5, 6, 7, 8
<div>EG-1</div> <div>CFM</div>	CEILING	EA	175	6X6	6X6	PRICE MSCP	1, 2, 3, 5, 7, 8
REGISTER, LOUVER AND DIFFUSER SCHEDULE NOTES:							
1. MAXIMUM NC = 25 @ MAXIMUM CFM NOTED.							
2. SEE SPECIFICATIONS FOR APPROVED MANUFACTURERS.							
3. FINISH SHALL BE OFF-WHITE BAKED ENAMEL.							
4. FINISH SHALL BE ANNODIZED ALUMINUM.							
5. MODIFY EXISTING WALL OR CEILING PENETRATIONS NECESSARY TO ACCOMMODATE NEW GRILLE. PROVIDE TRANSITION TO EXISTING DUCTWORK.							
6. PROVIDE WITH DAMPER.							
7. FINISH SHALL BE WHITE POWDER COAT.							
8. REGISTER OR GRILLE SHALL BE SECURITY TYPE. SEE SPECIFICATIONS.							

EXHAUST FAN SCHEDULE										
SYMBOL	MANUFACTURE R & MODEL No.	C.F.M.	STATIC PRESSURE IN. WG.	MAX NOISE SONES	MOTOR			OPER. WT. (LBS)	COMMENTS	SCHEDULE NOTES
					V - Ø - Hz	HP/W	RPM			
<div>EF</div> <div>1</div>	GREENHECK SPA110	80	0.25	1.7	120-1-60	49W	950	15	CEILING MOUNTED	1
<div>EF</div> <div>2</div>	GREENHECK CUBE 141-10	2000	1.25	12.9	208-3-60	1 HP	1725	90	ROOF MOUNTED	1,2,3
<div>EF</div> <div>3</div>	GREENHECK GB131-4	1570	0.375	11.6	120-1-60	0.21 HP	1725	60	ROOF MOUNTED	1,2,3
<div>EF</div> <div>4</div>	GREENHECK GB131-4	1570	0.375	11.6	120-1-60	0.21 HP	1725	60	ROOF MOUNTED	1,2,3
<div>EF</div> <div>5</div>	GREENHECK GB071-6	110	0.3	3.1	120-1-60	1/6 HP	1725	50	ROOF MOUNTED	1,2,3
<div>EF</div> <div>6</div>	GREENHECK GB141-5	2320	0.3	14.4	120-1-60	0.5 HP	1725	85	ROOF MOUNTED	1,2,3
<div>EF</div> <div>7</div>	GREENHECK GB141-5	2320	0.3	14.4	120-1-60	0.5 HP	1725	85	ROOF MOUNTED	1,2,3
<div>EF</div> <div>8</div>	GREENHECK GB 071-6	105	0.3	3.1	120-1-60	1/6 HP	1725	50	ROOF MOUNTED	1,2,3
<div>EF</div> <div>9</div>	GREENHECK GB 071-6	110	0.3	3.1	120-1-60	1/6 HP	1725	50	ROOF MOUNTED	1,2,3
<div>EF</div> <div>10</div>	GREENHECK GB131-4	1570	0.375	11.6	120-1-60	0.21 HP	1725	60	ROOF MOUNTED	1,2,3
<div>EF</div> <div>11</div>	GREENHECK GB131-4	1570	0.375	11.6	120-1-60	0.21 HP	1725	60	ROOF MOUNTED	1,2,3
<div>EF</div> <div>12</div>	GREENHECK GB071-6	105	0.3	3.1	120-1-60	1/6 HP	1725	50	ROOF MOUNTED	1,2,3
<div>EF</div> <div>13</div>	GREENHECK SPB200	190	0.25	3.8	120-1-60	129W	1050	10	CEILING MOUNTED	1
<div>EF</div> <div>14</div>	GREENHECK SPB200	190	0.25	3.8	120-1-60	129W	1050	10	CEILING MOUNTED	1
<div>EF</div> <div>15</div>	GREENHECK SPA-200	200	0.25	3.1	120-1-60	48W	900	21	CEILING MOUNTED	1
1. TIE INTO NEW BUILDING AUTOMATION SYSTEM, COORDINATE WITH ATC.										
2. INTERLOCK WITH KITCHEN MAKE-UP AIR UNIT.										
3. PROVIDE TRANSITION OR ADAPTER TO EXISTING ROOF CURB. AVOID NEW ROOF PENETRATIONS. IF CONTRACTOR PENETRATES EXISTING ROOF, PROVIDE CORRECT CURB FLASHINGS, CURBS, ETC. AND SEAL AIR AND WATER TIGHT.										

AIR COOLED CHILLED SCHEDULE																	
SYMBOL	MIN. CAPACITY TONS	GPM	COOLER DATA			CONDENSER DATA			ELECTRICAL						SCHEDULE NOTES	MANUFACTURER AND MODEL #	
			MAX. PRESS. DROP FT.	WATER IN TEMP °F	WATER OUT TEMP °F	EAT	ALTITUDE	TOTAL HEAT REJECTED	VOLTS	Ø	HZ	INRUSH AMPS	MCA	MOCP			CONTROL CIRCUIT
<div>CH 1</div>	34.8	85	23	45	55	95	5000	-	208	3	60	481	162	200	115/1/60	1.2,3	CARRIER 30RAN
1. PROVIDE WITH INTERNAL PUMP PACKAGE. INCLUDE TWO 3 HP PUMPS (SIZED FOR 40' EXTERNAL HEAD PRESSURE, PLUS PRESSURE DROP THROUGH CHILLER AND ACCESSORIES), EXPANSION TANK, STRAINER, AIR VENT, PRESSURE GAUGES, FLOW SWITCH, AND BALANCING VALVES. SEE DETAIL, SHEET ME 501.																	
2. UNIT SHALL BE PROVIDED WITH A SINGLE POINT POWER CONNECTION FOR CHILLER AND PUMP PACKAGE.																	
3. CHILLER PACKAGE SHALL BE SIZED FOR 30% PROPYLENE GLYCOL.																	

VVT BOX SCHEDULE						
SYMBOL	SERVES	INLET DIA. (NCHES)	MAX CFM	NC LEVEL	MANUF.	SCHEDULE NOTES
<div>VVT</div> <div>101</div>	OFFICE	10"	330	25	TRANE	1, 2
<div>VVT</div> <div>102</div>	OFFICE	10"	230	25	TRANE	1,2
<div>VVT</div> <div>103</div>	ENTRY	10"	300	25	TRANE	1,2
1. PROVIDE CONTROLS TO INTEGRATE WITH NEW PACKAGE ROOFTOP. RT-2						
2. SEE SPECIFICATIONS FOR OTHER APPROVED MANUFACTURERS.						

ROOFTOP AIR CONDITIONER SCHEDULE (GAS HEAT)																			
SYMBOL	MANUFACTURER & MODEL NUMBER	SA CFM	OSA CFM	E.S.P. IN W.G.	HEATING	COOLING			ELECTRICAL							EER/ SEER	OPER. WT. (LBS)	COMMENTS	SCHEDULE NOTES
					TOT. MIN. INPUT MBH	AMB. AIR (DB)	AMB. AIR (WB)	MIN. TOTAL MBH	V - Ø - Hz	COMPRESSOR #	COMPRESSOR RLA	EVAP BLOWER HP	POWER EXHAUST HP	MCA	MOCp				
<div><div>RT</div><div>1</div></div>	TRANE YSC102	3500	500	1.0	160	95	63	98	208/3/60	2	18.6/10.3	2	0.5	50	60	10.1	1195		1,2,3,4, 5, 6
1. E.S. P. DOES NOT INCLUDE LOSSES THROUGH ACCESSORIES.																			
2. RATED MINIMUM INPUT AT SEA LEVEL.																			
3. PROVIDE ONE 15 AMP, 120 VOLT, DUPLEX GFCI SERVICE OUTLET.																			
4. BELT DRIVE UNIT																			
5. PROVIDE WITH VVT CHANGE-OVER BYPASS CONTROLS PACKAGE AND LON CARD. TIE INTO EXISTING VVT TERMINALS. COORDINATE WITH ATC TO INTEGRATE LON CARD WITH NEW BMS.																			
6. PROVIDE ADAPTER CURB,ON EXISTING CURB IF NEW UNIT WILL NOT FIT ON EXISTING CURB.																			

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PROJECT NAME & ADDRESS

SOUTHWESTERN

YOUTH FACILITY

HVAC SYSTEM

UPGRADE

DIVISION OF YOUTH

CORRECTIONS

DFCM No. 05128430

Cedar City, Utah

MARK	DATE	REVISION

PROJECT MANAGER:

SLW

DRAWN BY:

LGD

CHECKED BY:

SLW

DATE:

02/08/06

WHW JOB NO.:

05020

SHEET TITLE

PROFESSIONAL ENGINEER

02/08/06

WINWARD M. PACKER

No. 375980

STATE OF UTAH

MECHANICAL SCHEDULES

SHEET NO.

ME602



- SHEET NOTES:**
- EXISTING CONDENSING UNITS TO BE DISCONNECTED AND REMOVED. DISCONNECT AND REMOVE ALL ASSOCIATED CONDUIT AND WIRE BACK TO WALL MOUNTED DISCONNECT SWITCH.
 - EXISTING FUSED DISCONNECT SWITCHES TO BE DISCONNECTED AND REMOVED. REMOVE WIRES BACK TO PANEL 'C2' AND LABEL CIRCUITS C-43 AND C-50 AS SPARE. CAP UNUSED CONDUITS AT EXTERIOR OF BUILDING.
 - EXISTING ROOF TOP UNIT TO BE DISCONNECTED, REMOVED AND REPLACED. EXISTING FEEDERS TO DISCONNECT TO BE REUSED. PROVIDE NEW FEEDERS AND LIQUID TIGHT CONDUIT FROM NEW DISCONNECT SWITCH TO UNIT.
 - EXISTING CEILING MOUNTED EXHAUST FAN TO BE DISCONNECTED, REMOVED AND REPLACED. EXISTING CIRCUITING AND CONTROLS TO BE REUSED.
 - EXISTING ROOF MOUNTED EXHAUST FANS TO BE DISCONNECTED, REMOVED AND REPLACED. EXISTING CIRCUITING TO BE REUSED. PROVIDE NEW FEEDERS AND LIQUID TIGHT CONDUIT FROM NEW THERMAL SWITCH TO UNIT.
 - EXISTING GAS FIRED UNIT HEATER TO BE DISCONNECTED, REMOVED AND REPLACED. EXISTING CIRCUITING AND CONTROLS TO BE REUSED.

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**DIVISION OF YOUTH
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LR

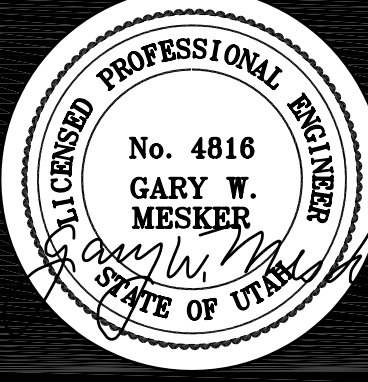
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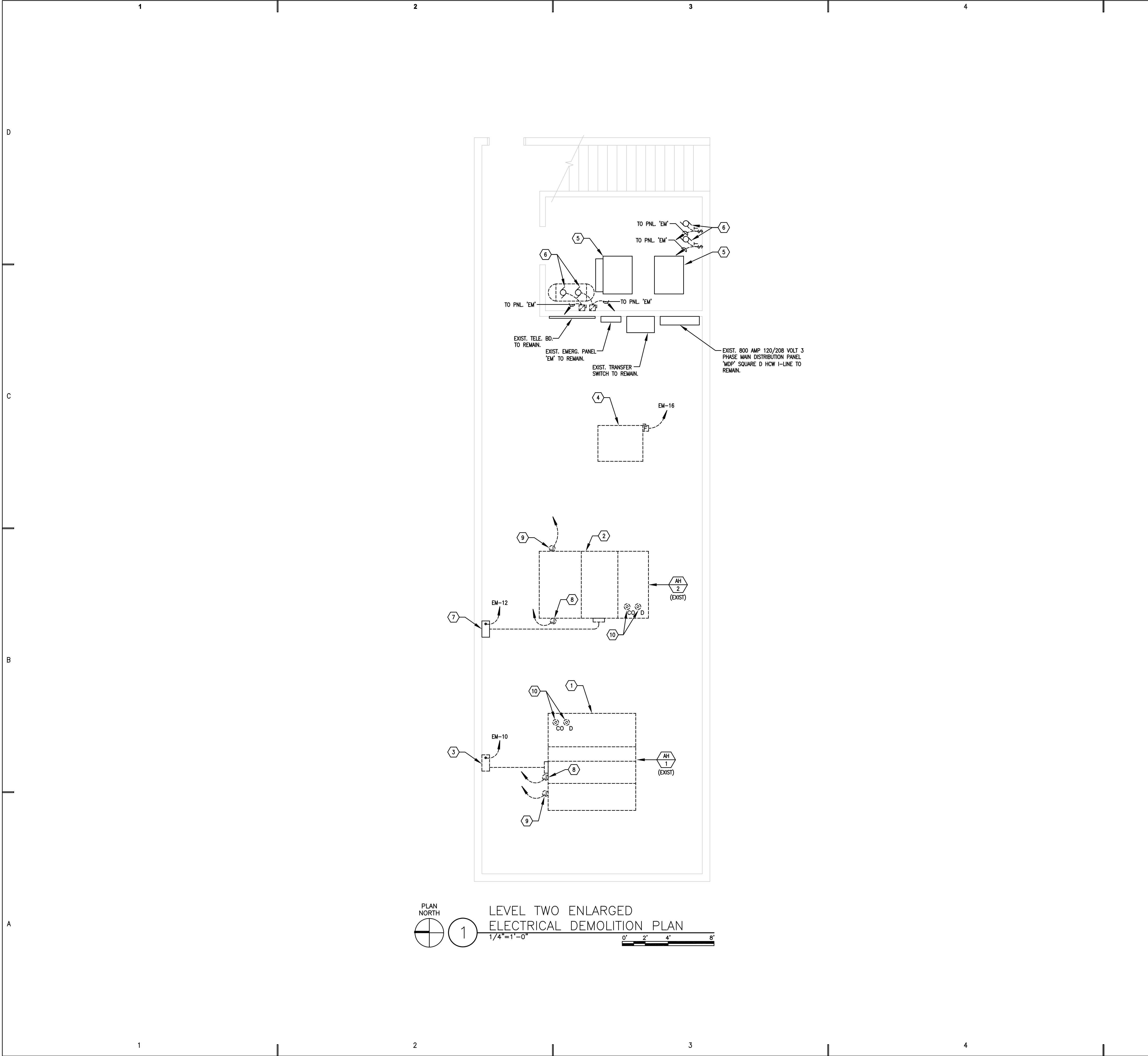
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SHEET TITLE



LEVEL ONE ELECTRICAL
DEMOLITION PLAN

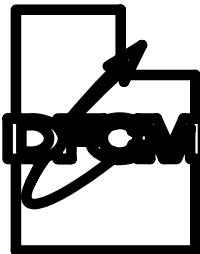
SHEET NO.
ED101



SHEET NOTES:

- EXISTING AIR HANDLER AH-1 TO BE DISCONNECTED REMOVED, AND REPLACED. DISCONNECT AND REMOVE ALL ASSOCIATED CONDUIT AND WIRE AS REQUIRED FOR UNIT REMOVAL. EXISTING CIRCUITING TO BE REUSED.
- EXISTING AIR HANDLER AH-2 TO BE DISCONNECTED REMOVED, AND REPLACED. DISCONNECT AND REMOVE ALL ASSOCIATED CONDUIT AND WIRE AS REQUIRED FOR UNIT REMOVAL. EXISTING CIRCUITING TO BE REUSED.
- EXISTING VARIABLE FREQUENCY DRIVE 'VFD' TO BE DISCONNECTED, REMOVED AND REPLACED. DISCONNECT EXISTING CONDUIT AND WIRE AS REQUIRED FOR UNIT REMOVAL. RETURN UNIT UNDAMAGED TO OWNERS REPRESENTATIVE.
- EXISTING MAKE-UP AIR UNIT TO BE DISCONNECTED, REMOVED AND REPLACED. DISCONNECT AND REMOVE ALL ASSOCIATED CONDUIT AND WIRE AS REQUIRED FOR UNIT REMOVAL. EXISTING CIRCUITING TO BE REUSED.
- EXISTING GAS BOILERS TO REMAIN. MAINTAIN EXISTING CIRCUITING.
- EXISTING HOT WATER PUMPS TO BE DISCONNECTED, REMOVED AND REPLACED. DISCONNECT AND REMOVE ALL ASSOCIATED CONDUIT AND WIRES AS REQUIRED FOR UNIT REMOVAL. EXISTING CIRCUITING TO BE REUSED.
- EXISTING VARIABLE FREQUENCY DRIVE 'VFD' TO REMAIN MAINTAIN EXISTING CIRCUITING.
- EXISTING AIR HANDLER PUMP CIRCUIT TO BE DISCONNECTED, REMOVED AND REUSED.
- EXISTING ATC JUNCTION BOX AND CONTROL WIRING TO BE DISCONNECTED AND REMOVED BY ATC CONTRACTOR.
- EXISTING DUCT DETECTOR AND CARBON MONOXIDE DETECTOR TO BE DISCONNECTED, REMOVED AND REINSTALLED IN NEW AIR HANDLER.

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**DIVISION OF YOUTH
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Cedar City, Utah

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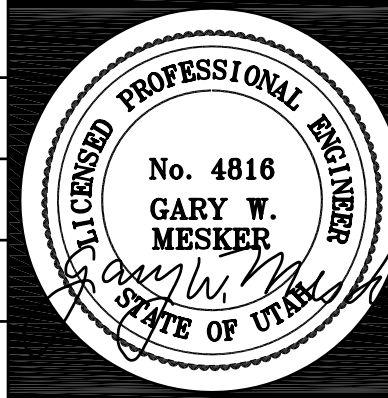
0617SG

SHEET TITLE

**LEVEL TWO ENLARGED
ELECTRICAL DEMOLITION
PLAN**

SHEET NO.

ED201



1

2

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C

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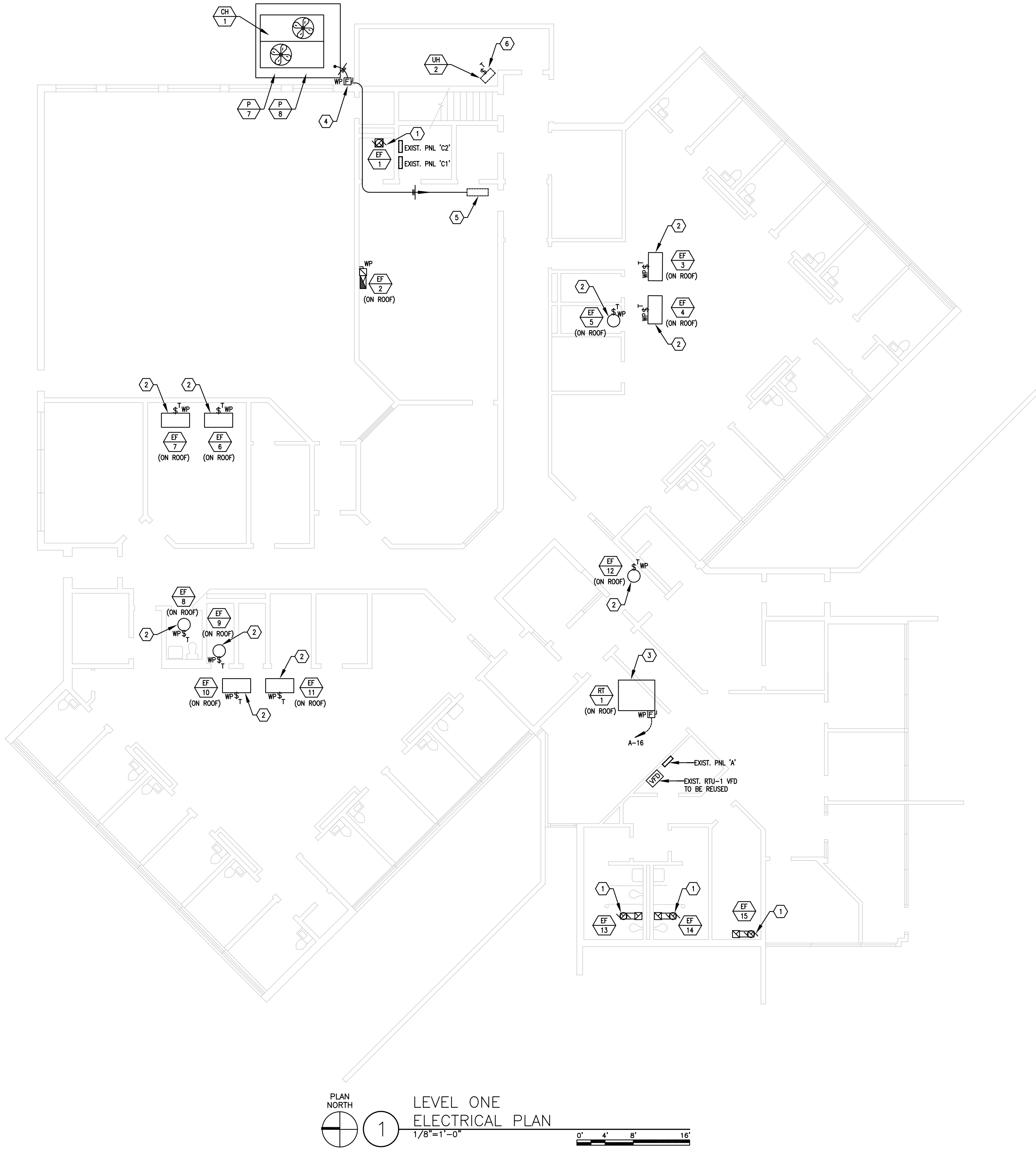
A

1

2

3

4



PLAN NORTH
1
LEVEL ONE ELECTRICAL PLAN
1/8"=1'-0"
0' 4' 8' 16'

- SHEET NOTES:**
- 1 PROVIDE FINAL ELECTRICAL CONNECTION TO CEILING EXHAUST FAN. EXISTING CIRCUITING TO BE REUSED.
 - 2 PROVIDE FINAL ELECTRICAL CONNECTION TO ROOF MOUNTED EXHAUST FAN. EXISTING CIRCUITING TO BE REUSED. PROVIDE NEW LIQUID TIGHT CONDUIT AND WIRE FROM NEW DISCONNECT DEVICE TO EXHAUST FAN AS REQUIRED.
 - 3 PROVIDE FINAL ELECTRICAL CONNECTION TO ROOF TOP UNIT. EXISTING CIRCUITING TO BE REUSED. PROVIDE NEW LIQUID TIGHT CONDUIT AND WIRE FROM NEW STARTER/DISCONNECT TO ROOF TOP UNIT AS REQUIRED.
 - 4 PROVIDE 200 AMP NEMA 3R FUSED DISCONNECT SWITCH FOR NEW CHILLIER. EXTEND 2" CONDUIT WITH 3 #2/0 THHN CU. & 1 #6 GND. TO PANEL 'MDP'. PROVIDE NEW 200 AMP 3 POLE CIRCUIT BREAKER IN PANEL MDP AND MAKE ALL FINAL CONNECTIONS.
 - 5 APPROXIMATE LOCATION OF EXISTING PANEL 'MDP' ON MEZZANINE.
 - 6 PROVIDE FINAL ELECTRICAL CONNECTION TO GAS FIRED UNIT HEATER. EXISTING CIRCUITING TO BE REUSED. PROVIDE NEW THERMAL SWITCH CONDUIT AND WIRE FROM SWITCH TO UNIT.

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DIVISION OF YOUTH CORRECTIONS

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Cedar City, Utah

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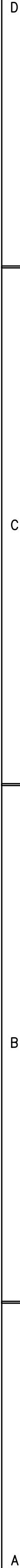
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LEVEL ONE ELECTRICAL PLAN

SHEET NO.

EP101



- ① NEW VFD PROVIDED AND INSTALLED BY DIVISION 16. EXTEND NEW 3/4" CONDUIT WITH 3 #10 THHN CU. & 1 #10 GND. FROM VFD TO AIR HANDLER CONNECTION POINT.
- ② PROVIDE NEW 120 VOLT LIGHTING CIRCUIT FROM PANEL 'EM' FOR CHILLER LIGHTS. EXTEND 2 #12 THHN CU. & 1 #12 GROUND 3/4" CONDUIT AS REQUIRED AND MAKE ALL FINAL CONNECTIONS.
- ③ RECONNECT EXISTING 120 VOLT PUMP CIRCUIT TO NEW PUMP P-3.
- ④ CONTROL WIRING AND CONDUIT PROVIDED AND INSTALLED BY CONTROLS CONTRACTOR.
- ⑤ RECONNECT EXISTING 120 VOLT PUMP CIRCUIT TO NEW PUMP P-4.
- ⑥ RECONNECT EXISTING 208 VOLT 3 PHASE 20 AMP MAKE UP AIR CIRCUIT TO NEW FUSED DISCONNECT.
- ⑦ RECONNECT EXISTING 208 VOLT 3 PHASE 20 AMP PUMP CIRCUIT TO NEW STARTER DISCONNECT. PROVIDE NEW CONDUIT AND WIRE FROM STARTER TO PUMP.
- ⑧ RECONNECT EXISTING 120 VOLT PUMP CIRCUITS TO PUMPS P-5 & P-6. PROVIDE NEW THERMAL SWITCHES AS INDICATED.
- ⑨ REINSTALL EXISTING DUCT DETECTOR AND CARBON MONOXIDE DETECTOR AND RECONNECT TO FIRE ALARM DETECTION SYSTEM AS REQUIRED.
- ⑩ EXISTING VFD TO BE REUSED. PROVIDE NEW CONDUIT AND CONDUCTORS FROM VFD TO AH-2.
- ⑪ PROVIDE NEW 50 AMP 3 POLE CIRCUIT BREAKER IN PANEL 'EM' CIRCUIT #10 FOR AH-1. EXISTING CONDUIT AND #10 WIRING TO REMAIN.

EP201

EQUIPMENT SCHEDULE														
UNIT #	FUNCTION	LOAD	VOLT	PHASE	FULL LOAD	AMPS	CONDUIT SIZE	WIRES		OCPD	REF. NOTES			REMARKS
								NO.	SIZE		STARTER	DISCONNECT	OTHER	
AH-1	AIR HANDLER	7.5 HP	208	3	24.20		3/4"	1	3	10	CB	50	2A	
AH-2	AIR HANDLER	5 HP	208	3	16.70		3/4"	1	3	12	CB	30	2A	
CH-1	CHILLER	162 MCA	208	3	137.00		2"	1	3	2/0	CB	200		
EF-1	EXHAUST FAN	49 W	120	1	0.48		3/4"	1	2	12	CB	20		11A
EF-2	EXHAUST FAN	1 HP	208	3	4.60		3/4"	1	3	12	CB	20	7A	
EF-3	EXHAUST FAN	1/4 HP	120	1	5.80		3/4"	1	2	12	CB	20		11A
EF-4	EXHAUST FAN	1/4 HP	120	1	5.80		3/4"	1	2	12	CB	20		11A
EF-5	EXHAUST FAN	1/8 HP	120	1	4.40		3/4"	1	2	12	CB	20		11A
EF-6	EXHAUST FAN	.5 HP	120	1	9.80		3/4"	1	2	12	CB	20	4A	
EF-7	EXHAUST FAN	.5 HP	120	1	9.80		3/4"	1	2	12	CB	20	4A	
EF-8	EXHAUST FAN	1/8 HP	120	1	4.40		3/4"	1	2	12	CB	20		11A
EF-9	EXHAUST FAN	1/8 HP	120	1	4.40		3/4"	1	2	12	CB	20		11A
EF-10	EXHAUST FAN	1/4 HP	120	1	5.80		3/4"	1	2	12	CB	20		11A
EF-11	EXHAUST FAN	1/4 HP	120	1	5.80		3/4"	1	2	12	CB	20		11A
EF-12	EXHAUST FAN	1/8 HP	120	1	4.40		3/4"	1	2	12	CB	20		11A
EF-13	EXHAUST FAN	129 W	120	1	1.26		3/4"	1	2	12	CB	20		11A
EF-14	EXHAUST FAN	129 W	120	1	1.26		3/4"	1	2	12	CB	20		11A
EF-15	EXHAUST FAN	48 W	120	1	0.47		3/4"	1	2	12	CB	20		11A
MA-1	MAKE UP AIR	1.5 HP	208	3	6.60		3/4"	1	3	12	CB	20	2A	
P-1	PUMP	1.5 HP	208	3	6.60		3/4"	1	3	12	CB	20	7A	
P-2	PUMP	1.5 HP	208	3	6.60		3/4"	1	3	12	CB	20	7A	
P-3	PUMP	1/3 HP	120	1	7.20		3/4"	1	2	12	CB	20	4A	
P-4	PUMP	1/3 HP	120	1	7.20		3/4"	1	2	12	CB	20	4A	
P-5	PUMP	1/8 HP	120	1	4.40		3/4"	1	2	12	CB	20	4A	
P-6	PUMP	1/8 HP	120	1	4.40		3/4"	1	2	12	CB	20	4A	
P-7	PUMP	1/3 HP	120	1	7.20		3/4"	1	2	12	CB	20	4A	
P-8	PUMP	1/3 HP	120	1	7.20		3/4"	1	2	12	CB	20	4A	
RT-1	ROOF TOP UNIT	50 MCA	208	3	42.50		3/4"	1	3	6	CB	50	2A	
UH-2	UNIT HEATER	1/5 HP	120	1	4.90		3/4"	1	2	12	CB	20	4A	
NOTES: 1. NON--FUSED DISCONNECT SWITCH 2. FUSED DISCONNECT SWITCH 3. BREAKER IN ENCLOSURE 4. MANUAL STARTER W/THERMAL OVERLOAD 5. MAGNETIC STARTER 6. MAGNETIC STARTER/NON--FUSED DISCONNECT COMBINATION 7. MAGNETIC STARTER/FUSED DISCONNECT COMBINATION 8. MAGNETIC STARTER/BREAKER COMBINATION 9. VARIABLE FREQUENCY DRIVE 10. REDUCED VOLTAGE STARTER 11. DIRECT CONNECTION 12. RECEPTACLE/SPECIAL PURPOSE OUTLET/ETC. 13. TWO--SPEED STARTER, COORDINATE W/MOTOR TYPE A. FURNISHED, INSTALLED, AND CONNECTED UNDER DIVISION 16 B. FURNISHED AND INSTALLED UNDER ANOTHER DIVISION REQUIRING CONNECTION UNDER DIVISION 16. C. FURNISHED UNDER ANOTHER DIVISION BUT INSTALLED AND CONNECTED UNDER DIVISION 16. D. FURNISHED, INSTALLED AND CONNECTED UNDER ANOTHER DIVISION. OVER CURRENT PROTECTIVE DEVICES CB = CIRCUIT BREAKER -- THERMAL MAGNETIC FN = FUSE -- NON INDUCTIVE LOAD FI = FUSE -- INDUCTIVE LOAD MO = MAGNETIC ONLY CIRCUIT BREAKER														

DEMOLITION NOTES	
1.	COORDINATE ALL NEW ELECTRICAL EQUIPMENT REQUIREMENTS AND MAKE CONNECTION TO EXISTING SYSTEMS. THIS INCLUDES LIGHTING, POWER, SIGNAL, RACEWAY AND OTHER SYSTEMS INCLUDED UNDER DIVISION 16.
2.	RELOCATE, REWIRE AND/OR RECONNECT EXISTING ELECTRICAL DEVICES AND/OR EQUIPMENT THAT FOR ANY REASON OBSTRUCTS CONSTRUCTION.
3.	CONCEAL ALL RACEWAY AND WIRING IN EXISTING WALLS, CEILINGS, FLOORS, ETC. EXCEPT WHERE THE USE OF SURFACE METAL RACEWAYS (E.G. WIRE MOLD) IS INDICATED ON DRAWINGS OR IN SPEC.
4.	LEAVE ALL EXISTING EQUIPMENT, IN PORTIONS OF THE BUILDING NOT BEING REMODELED, IN WORKING CONDITION. RESTORE ALL INTERRUPTED BRANCH CIRCUITS, FEEDERS, ETC. TO WORKING CONDITION.
5.	EXISTING RACEWAYS MAY BE REUSED (IN PLACE) WHERE POSSIBLE, AND WHERE IN COMPLIANCE WITH THE SPECIFICATIONS AND THE INTENT OF THE CONTRACT DOCUMENTS. INSURE INTEGRITY OF EXISTING RACEWAY BEFORE REUSE.
6.	REMOVE ALL RACEWAYS, CONDUCTORS, BOXES, DEVICES, EQUIPMENT, ETC. THAT ARE NOT TO BE REUSED.
7.	DO NOT PENETRATE STRUCTURAL ELEMENTS OF FLOORS, WALLS, CEILINGS, ROOFS, ETC.
8.	DISCONNECT AND RECONNECT ANY/ALL FIXTURES, DEVICES, EQUIPMENT, ETC. REQUIRED FOR PROPER COMPLETION OF THE WORK.

ELECTRICAL SYMBOL SCHEDULE			
1. SEE FIXTURE SCHEDULE FOR TYPE, MOUNTING AND WATTAGE. 2. HEIGHT MEASURED TO TOP LINE OF THE BOX FROM THE FINISH FLOOR. 3. REFER TO DRAWINGS FOR DIRECTIONAL ARROWS. 4. SUBSCRIPT KEYS SWITCH TO FIXTURES CONTROLLED. 5. NEMA TYPE 'ND' NON--FUSED UNLESS NOTED 'F' (FUSED). USE 'HD' 480 V. 6. HEIGHT TO BE THE LOWER OF EITHER 80" A.F.F. OR 6" BELOW CEILING. 7. PROVIDE H.O.A. AND S.S. PUSHBUTTONS AS REQUIRED. 8. DOUBLE ARROWS DENOTE A DOUBLE FACE UNIT. 9. COORDINATE WITH MILLWORK SHOP DRAWINGS AND ELEVATIONS FOR HEIGHT. 10. SUBSCRIPT DENOTES NEMA CONFIGURATION. 11. HEIGHT MEASURED TO BOTTOM OF THE BOX FROM FINISH FLOOR.			
STANDARD MOUNTING HEIGHT UNLESS OTHERWISE NOTED ON PLANS			
SYMBOL	DESCRIPTION	MOUNTING HEIGHT	NOTES
	ONE CIRCUIT, TWO WIRE HOME RUN TO PANEL		
	2 CIRCUIT, 3 WIRE, COMMON NEUTRAL HOME RUN		
	3 CIRCUIT, 4 WIRE, COMMON NEUTRAL HOME RUN		
	CONDUIT RUN CONCEALED IN WALL OR CEILING		
	CONDUIT RUN CONCEALED IN FLOOR OR GROUND		
	CONDUIT UP		
	CONDUIT DOWN		
	CONDUIT STUB LOCATION		
	DUPLEX RECEPTACLE	CAP CONDUIT +16" OR AS NOTED	9. 11.
	GROUND FAULT INTERRUPTER DUPLEX RECEPTACLE	+16" OR AS NOTED	9. 11.
	MOTOR OUTLET	TO SUIT EQUIP.	
	FUSED DISCONNECT SWITCH	+5'-0"	5.
	MANUAL STARTER THERMAL OVERLOAD SWITCH WITH PILOT LIGHT	+4'-0"	2.
	MAGNETIC STARTER / DISCONNECT COMBINATION	+5'-0"	
	VARIABLE FREQUENCY DRIVE	+6'-6"	
	PANEL BOARD	TOP AT +6'-0"	
	MAIN DISTRIBUTION PANEL		
	TELEPHONE TERMINAL BOARD		
	ARCHITECTURAL ROOM NUMBER		
	EQUIPMENT NUMBER		

GENERAL NOTES	
1.	VERIFY ALL EQUIPMENT DIMENSIONS AND LOCATIONS BEFORE BEGINNING ROUGH IN. CONSULT ALL APPLICABLE CONTRACT DRAWINGS AND SHOP DRAWINGS TO INSURE NEC CODE CLEARANCES REQUIRED AROUND ALL ELECTRICAL EQUIPMENT.
2.	CONTRACTOR SHALL VERIFY ALL ELECTRICAL LOADS (VOLTAGE, PHASE, CONNECTION REQUIREMENTS, ETC.) OF EQUIPMENT FURNISHED UNDER DIVISION 15 WITH APPROVED MECHANICAL SHOP DRAWINGS BEFORE BEGINNING ROUGH IN.
3.	SEE SPECIFICATIONS FOR REQUIRED COORDINATION MEETINGS WITH MECHANICAL AND CEILING CONTRACTORS.
4.	SEE APPLICABLE SHOP DRAWINGS FOR ROUGH IN LOCATION OF ALL EQUIPMENT.
5.	THE ELECTRICAL CONTRACTOR SHALL NOTIFY AND COOPERATE WITH THE MECHANICAL CONTRACTOR SUCH THAT NO PIPING, DUCTS, OR EQUIPMENT FOREIGN TO THE OPERATION OF THE ELECTRICAL EQUIPMENT SHALL BE PERMITTED TO BE INSTALLED IN, ENTER OR PASS THRU ELECTRICAL ROOMS OR SPACES, OR ABOVE OR BELOW ELECTRICAL EQUIPMENT IN OTHER AREAS.
6.	ELECTRICAL BOXES SHALL NOT BE LOCATED IN MASONRY COLUMNS IN BRICK WALLS OR IN GROUTED CELLS ADJACENT TO OPENINGS. COORDINATE LOCATION OF BOXES WITH MASONRY CONTRACTOR.
7.	ALL PENETRATIONS OF FIRE RATED FLOORS, WALLS, AND CEILINGS SHALL BE SEALED WITH APPROVED MATERIAL TO MAINTAIN FIRE RATING OF SURFACE PENETRATED.
8.	CIRCUITS EXTENDING OVER 70' FOR 120 VOLT AND 165' FOR 277 VOLT 20 AMP CIRCUITS SHALL BE RUN WITH MINIMUM #10 CONDUCTORS.

INDEX OF ELECTRICAL DRAWINGS	
EG101	SYMBOLS, NOTES & SCHEDULES
ED101	LEVEL ONE ELECTRICAL DEMOLITION PLAN
ED201	LEVEL TWO ENLARGED ELECTRICAL DEMOLITION PLAN
EP101	LEVEL ONE ELECTRICAL PLAN
EP201	LEVEL TWO ENLARGED ELECTRICAL PLAN

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PROJECT NAME & ADDRESS

**SOUTHWESTERN
YOUTH FACILITY
HVAC SYSTEM
UPGRADE**
**DIVISION OF YOUTH
CORRECTIONS**
DFCM No. 05128430
Cedar City, Utah

MARK	DATE	REVISION

PROJECT MANAGER:
LR

DRAWN BY:
SA

CHECKED BY:
LR

DATE:
02/07/06

WHW JOB NO.:
0617SG

SHEET TITLE

**SYMBOLS, NOTES
& SCHEDULES**

SHEET NO.

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